

A person wearing a black graduation cap and gown is seen from behind, reaching up to grasp a green rope on a grey rock climbing wall. The wall is equipped with several colorful climbing holds in yellow, blue, and red. The overall scene is brightly lit, suggesting an outdoor or well-lit indoor climbing gym.

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ONLINE EXCLUSIVES



Reduce Supply Chain Costs with Consolidated Procurement Strategies bit.ly/ReduceSCCosts

Shruti Agrawal, Director, Excella Worldwide

Consolidating suppliers is one of the best ways to ensure your supply chain is as streamlined and cost-effective as possible. Here are two strategies to get you started.



Why Global Trade Needs a Rebrand bit.ly/RebrandGlobalTrade

Tarek Sultan, CEO, Agility

To revive trade-led growth, we need to look more closely at the bureaucracy and red tape that slow trade and make it more costly than it should be.



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Kevin Hill, Online Marketing Manager, Quality Scales Unlimited

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CHECKING IN

Keith Biondo

by Keith Biondo | **Publisher**



This was originally published in June 2003, but with Amazon's recent drone patent filing, we thought you'd enjoy the look back.

Flight of Fancy (Revisited)

Back in 2003 Paul MacCready's famous company, Aerovironment Corp., brought to market an Unmanned Aerial Vehicle (UAV) that revolutionized expedited and emergency transport services in America. That was seven years ago. Since then, the UAV 2030 AllCargo has captured 38 percent of the critical shipment market.

Soaring above traffic, tolls, and crumbling infrastructure, the unmanned cargo plane hits speeds of 170 mph, and carries time-sensitive shipments weighing about 300 pounds. Guided by the latest generation GPS, the UAV 2030 AC sports the new UPS logo on its "tail." It has an upgraded collision avoidance inertial guidance system because the skies grow more crowded every month.

Shippers and consignees tap into real-time 3D telemetry and video feed if they need to track progress and make certain their critical shipments are on the right route and schedule.

The UAV AllCargo bird reaches its destination, hovers on station, and announces its arrival. Not that it needs to, as the DC manager and his repair team anxiously await the replacement armature and control module they need to get the facility's high-speed pick/pack and sortation system up and running again. The past few hours of downtime have been pure hell as the DC manager's blood pressure inversely tracked the falloff in inventory turns. Who would have guessed his on-hand replacement was bad as well?

But all that will soon be behind him as the hovering bird drops its shock-resistant pod in the facility's back parking lot. Because the DC manager is not a regular user of the critical-shipment service, he does not have the UPS ultrafoam LZ to cushion the part. Instead he stacks empty cardboard boxes, hoping the shock-resistant pod performs to specs on the one-foot drop height.

The pod drops—bull's eye—and the DC manager's team scrambles to get the spare part. He watches as the high-tensile spun Kevlar and titanium bird breaks up on cue and falls to the ground. It's done that way to make it easier for his dock crew to pack the bird up in the included Tyvek package, add bubble foam, slap a UPS GroundTrac label on it and await the morning pickup.

FedEx offers a similar service, except that upon delivery you flip some switches and the UAV lifts off vertically and flies back to the nearest terminal, servicing a mini hub-and-spoke territory, if you will. UPS, possibly in an effort to keep insurance rates lower, prefers the self-pack and pickup method of return. Different strokes...The DC managers hears that both companies will roll out the service in Europe next month, except for the French EU zone where they refer to the cargo UAVs as "American gnats."

Well you can't stop progress and the UAV 2030 AllCargo just saved his skin. As the DC manager turns back to his facility he can already hear the high-pitched whine of his conveyors ramping up to speed.

Boy his team is good. He shakes his head in wonder at the technology and ingenuity of what happened in the past eight minutes and wonders aloud, "What will they think of next?"

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LIKE & COMMENT



The concept and term "driverless" merits a closer look.

How Driverless Trucks Will Change Supply Chain Strategy

The driverless truck phenomenon is closer to reality than you might think and that means it's time to start strategizing how this could impact supply chains. bit.ly/driverlesstruckschangeSC

Dan Murray

Interesting article. I'd recommend readers obtain ATRI's free research report on autonomous trucks (ATs) (www.atri-online.org), which analyzes many practical implications and impacts from ATs. One of the first messages is to stop using the term "driverless trucks"—because no one in the industry intends to remove the human from the cab. "Self-driving" is more appropriate and accurate. "Driverless" is a term coined by Google and the PR folks (ironic because even Google cars have a driver).

SOUNDBITE

“The integration of supply chains across NAFTA's countries has helped realize otherwise unattainable economies of scale and efficiencies that have made North American industry more globally competitive.”

—**JEAN-FRANÇOIS PERRAULT**, senior vice president and chief economist at Scotiabank, a financial services provider, which recently released the first of its North America Free Trade Agreement (NAFTA) Reports series.



EXCHANGE

Working at People Speed

Will supply chain impatience drive all people out of manufacturing and supply chain operations? *IL* Publisher Keith Biondo says don't push people out of the equation just yet. bit.ly/peopleneeded

Zach Anderson

I appreciate the sentiment behind this post. Humans are needed in the logistics industry. That being said, the role they play will change as interaction with technology changes. As operational tasks begin to be automated, skills such as analytics, customer service, and empathy will be emphasized. Something that I recently read compared treating technology as just another employee, resource, or tool and not as a replacement.

READER EMAIL

The Future of Predictive Analytics Looks Certain

bit.ly/PredictingtheFuture

The future of the supply chain will be about data intelligence, not scale. Early notions of predictive analytics properly identified that cloud computing and data are key. Today, true predictive logistics can be achieved by first using intelligence platforms to organize logistics data, making it accessible via APIs and machine-intelligence ready. Industry-tailored machine learning and AI can deliver unprecedented predictive accuracy and profitability gains.

Adam Compain
CEO, ClearMetal

HOT TOPICS | *IL* articles getting the most impressions on LinkedIn: NFL Intercepts Challenges, Tackles Data Collection: bit.ly/NFLcasestudy • Saving Green While Going Green: bit.ly/greenbottomline • Instill Passion, Purpose, and Leadership to Attract and Retain Logistics Talent: bit.ly/logisticstalent • 10 Greenest Ports in America: bit.ly/top10greenports • 10 Ways to Steer a Career Drive: bit.ly/10careerboostingmoves



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Industry 4.0 – How intelligent machines are transforming supply chains

MARKUS LORENZ
Partner and Managing Director, The Boston Consulting Group

**Wednesday, April 5
8:45 AM – 9:45 AM**

Preview of MHI 2017 Annual Industry Report

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Good Question...

READERS WEIGH IN

Who would be on your Mount Rushmore of transportation and logistics visionaries?

R. Gene Richter, the logistics visionary. President Eisenhower, who made possible the U.S. Interstate Highway System. Henry Ford as a founder of the automobile industry and creator of the assembly line. And Amazon founder Jeff Bezos, who developed one of the most dynamic global supply chain operations.

M.L. Peck
Senior Vice President
Institute for Supply Management®

J.B. Hunt, the creative disruptor of truckload and intermodal transportation. Irwin Jacobs, who made mobile satellite communication effective and affordable.

Tom Sanderson
CEO, Transplace

FedEx founder Fred Smith and shipping and railroad magnate Cornelius Vanderbilt. And Grace Hopper, the inventor of the computer compiler, which led to computers using words to compute vs. only numbers.

Bruce Welty
Founder, Locus Robotics

Jim Johnston, president, Owner-Operator Independent Drivers Association, for championing owner-operators. Anthony Foxx, former U.S. Secretary of Transportation, for supporting autonomous vehicles. Dr. Yossi Sheffi, director, MIT Center for Transportation and Logistics, for leadership in education, research, and industry/government outreach programs.

Andrew Kelley
President, haulme

Elon Musk and Malcom McLean. Musk for revolutionizing the transportation industry; and McLean for inventing the shipping container, an indispensable efficiency in global trade.

Reinhard Steup
Senior Manager
HAVI Supply Chain Management

William H. Russell, Alexander Majors, and William B. Waddell: founders of the Pony Express. Gustavus Swift: developed the first "refrigerated rail car." Jimmy Carter: president who signed the Motor Carrier Act of 1980, which deregulated the trucking industry.

Anthony Ceritelli
Regional Coordinator, Zipline Logistics

A Piece of the Rock

IL's LinkedIn followers suggest carving these notable names:

Juan Trippe

Commercial aviation pioneer and Pan Am founder

James E. Casey

Founder and former CEO of UPS

Larry Rodberg Sr.

Airfreight leader and former executive of three airfreight companies

Ralph Budd

Railroad builder and former president of Great Northern Railway

Don Schneider

Trucking industry visionary and former president and CEO of Schneider National

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10 TIPS

STEP-BY-STEP SOLUTIONS



Choosing a Yard Management System

A yard management system (YMS) can provide significant benefits to your operation. Despite this, the yard is often the last area to automate and many operations still manage their yards with radios and clipboards. Greg Braun, senior vice president of sales and marketing with C3 Solutions, provides these pointers to help you select a YMS.

1 Define issues. Clearly explain the business problems that are related to yard management. Avoid identifying symptoms and focus on the core problem. For example, spending too much time locating trailers is the symptom while missing customer deliveries is the problem.

2 Match needs with requirements. After identifying your core business issues, align these needs to functional requirements. Ensure that the system you select is highly configurable and flexible enough to accommodate your business processes.

3 Outline a data integration strategy. Key business issues can drive this strategy. Look for a system that utilizes current integration technology—such as web services—and is able to accommodate your specific data feeds.

4 Determine if you need appointment scheduling instead. Vehicle congestion often causes yard problems. Planning the optimal arrival of vehicles to maximize yard throughput can reduce the requirements of a YMS—to the point of eliminating the need completely.

5 Build a strong Return on Investment (ROI) analysis. A solid ROI is key to getting your project approved. A YMS will increase yard driver productivity, improve trailer utilization, and generally augment your site's throughput. Start by defining your operational costs in these key areas to estimate the potential returns.

6 Decide between a cloud or on-premise system. This decision could limit your vendor choices because many vendors sell their solutions as cloud only. With your IT department's current work load, what is the most effective role for them to play to maximize benefit to your enterprise?

7 Verify the technology. When evaluating potential vendors, examine their product roadmap, such as their mobile strategy. Does the vendor leverage common operating systems such as Android or iOS? Is the application a true

web application or does it use terminal server technology? These factors will affect not only the longevity of your solution but also its usability.

8 Establish if real-time locating systems are necessary. The key is to understand your operation and analyze where a locating solution might give you an efficiency boost that you can't achieve through more effective process management. Consider implementing process change in phase one, and, if necessary, implement a locating solution in phase two.

9 Identify resiliency. An important element of any information system is whether you can rely on it. Pinpoint the service levels that each vendor is willing to provide. Can your operation live with these service levels? What are the consequences if the vendor does not deliver?

10 Choose a reputable vendor. Research the vendor's reputation, speak with its customers, and ask about the future of the product. This can also be seen as a choice between best-of-breed or a monolithic system. For example, your systems might already have a yard module, which may appear to be a low-cost option, but might not be sufficient. ■



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Cliff Otto
President and CEO
Saddle Creek
Logistics Services

LEADERSHIP

*Conversations With
The Captains of Industry*

By Merrill Douglas

Sound Strategy, Talented Team

IF THERE'S A SECRET TO CLIFF OTTO'S leadership, it's his focus on people. "One of the most important things I've learned is to hire the best people you can find, and challenge them with opportunities that make them grow," he says.

Otto joined Saddle Creek Logistics Services in 2001 and became its president in 2007 and CEO in 2013. In that leadership role, he opted to delegate more authority, giving people the freedom to operate in ways that work best for them. "We've had great success over the years because we have cultivated a talented team of individuals who are open to challenges and willing to stretch themselves for the good of the company," he says.

Otto recently talked to *Inbound Logistics* and shared some insights on leadership and his own career.

IL: You've worked in logistics your entire career. What's the attraction?

I grew up in the industry, and I always found it interesting. My dad was a traffic manager at a carburetor company in St. Louis. When I was in high school, he helped me get a job at a local public warehouse, doing everything from driving a forklift to loading trucks. I worked there through college and got a lot of experience from the ground up. I went on to get my MBA with an emphasis in logistics. Because not many people had training in the field back then, there were some great career opportunities.

As I became more involved, I found that I enjoyed the field, liked the challenges, and appreciated the opportunity to interact with marketing, sales, purchasing, and other areas.

IL: What are some early experiences that helped shape the kind of leader you are today?

Early in my career, while working for Baxter Healthcare, I had the chance to manage distribution operations in both Canada and Puerto Rico. Those were big assignments for someone at my experience level. I learned a lot very quickly—how to get a team up and running, and how to get things done by developing relationships and building good will.

Later, I was recruited to join a start-up, CHEP, just six months before its first shipment. It was a risky decision but I loved the challenge. It gave me a chance to expand beyond distribution and get involved with sales, marketing, and purchasing.

IL: How would you describe your style as a leader?

I've come to believe that leaders are most successful when they do just that—lead. As a leader, you should focus on developing a sound strategy, surround yourself with a talented team, and empower team members to approach the business with creativity and fresh ideas.

Saddle Creek's brand promise is *Whatever it Takes!* I value that entrepreneurial philosophy. We all thrive here because we have created a fast-paced environment and are willing to take calculated risks to grow our business and satisfy our customers' needs.

IL: How do you keep your employees engaged and excited about coming to work every day?

We have a strong corporate culture built on shared core values, which emphasize excellence in service, respect for the individual, performance and accountability, a supportive work environment, and integrity. We discuss those values regularly and challenge ourselves to live them every day.

We focus on creating an environment where associates can perform their best, and then giving them the freedom to do so. Most people—particularly those whom you would want to have in a growth organization—want to have the opportunity to personally contribute. The key is to make sure we're all working toward the same business goals.

IL: What's one of the bigger, more interesting challenges you've tackled since you've been leading Saddle Creek?

When I was promoted to president in 2007, the management team determined that we wanted to grow from a regional third-party logistics provider to a leading nationwide provider.

To grow as fast as we wanted, we recognized that we needed to give everyone the freedom to figure out what's best and hold them accountable—essentially push decision making and accountability down a level. Decisions traditionally made by the president would be made by the vice presidents, and so on. Empowering employees at all levels created more time for strategy at the higher levels of the company.

One challenge was getting people to understand their new levels of authority and accountability. Of course, that business model didn't work for everyone, but most employees embraced the enhanced responsibility and entrepreneurial spirit.

To succeed as a company, we had to be much better at two things—expanding geographically to prove that we could be a nationwide provider, and building brand awareness.

IL: What's at the top of your agenda at the company these days?

We will continue to focus on omni-channel—broadening our capabilities, expanding systems support, and ensuring that our clients get what they need. Maintaining our strong corporate

culture is also a priority, because our value system is our principal competitive advantage.

IL: How do you stay in touch with what your customers need?

There's no substitute for firsthand information. Everyone on our management team is actively involved in solution development. We all take time to sit down with customers to ensure that we understand the big picture and what they're trying to achieve.

IL: Outside of work, how do you like to spend your time?

I enjoy playing a leadership role in a number of organizations, including the International Warehouse Logistics Association and several local charities. I am fortunate to serve on the board of trustees at Florida Polytechnic University, because I believe that training tomorrow's potential Saddle Creek associates is critical. Beyond that, I enjoy time with my family. I'm also an avid golfer and a quasi-gourmet cook on the weekends, and I enjoy a good Grisham or Baldacci novel. ■

Advice for the Next Generation

Are you a recent college graduate looking to climb the ladder in logistics? Be aware of the people you work with and for, Cliff Otto advises: "Try to understand what they're doing and why, and how it relates to what you're doing." And don't forget to shine a light inward. "Self awareness is very important for success," he adds. "Understand what you can and can't change and how to turn impediments into assets."

New logistics professionals also need to master a skill that's rarely taught in college—how to collaborate with associates who work on the front lines, in warehouses, in trucks, and on the yard, to accomplish objectives. "If you can learn how to keep everyone engaged, and how to manage and motivate your whole team, then you've got something that a lot of people in our field don't have," Otto says. "You can carry that with you for the rest of your career."



Jonathan Parks is vice president of global logistics and distribution with Rent-A-Center, which offers name-brand furniture, electronics, appliances, and computers through flexible rental purchase agreements. He started with the company in 2010 and has held this position since 2015.

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EDUCATION

MBA, University of Dallas, 2009; B.S. in Industrial Engineering, Texas A&M, 2003.

Jonathan Parks: Planning is Key, to Say the Least

I JOINED RENT-A-CENTER AS A MEMBER OF THE STRATEGIC planning team, thinking I was taking a step away from logistics. The company was expanding into Mexico, developing new business models, and optimizing current operations.

Rent-A-Center's supply chain had been serving stores through a network of distributors; we didn't stock inventory in warehouses. That caused fragmentation and lack of control. In addition, many of our suppliers in Mexico were unable to work through distributors. That forced us to move to a company-run logistics and distribution operation.

After running our Mexican operation for a few years, we gained the confidence and experience to change the way our U.S. supply chain serves our stores here.

We spent more than one year developing the strategy and then made an aggressive plan to transform our supply chain in 2015 by opening five distribution

centers and the transportation solutions to support them, all in four months.

Planning, planning, and more planning was critical to success. Systems, processes, training, support, accounting, and other areas had to transform, along with our supply chain. Departments met weekly to assess progress and adjust as required to achieve our goals.

We tested in infinite detail to guarantee the operations would run as intended from the moment we placed the first purchase order. For instance, once a product was received in the distribution center, did we see it in inventory? Because of that extreme focus and collaboration, we didn't miss a single date.

The Big Questions

Where would you like to travel?

My list holds many of the usual suspects in Europe. I have been fortunate to cover a lot of territory in North America, and I'm looking forward to traveling to Australia, Croatia, China, Japan, and maybe an African safari.

What has been a big influence in your life?

My mother and father instilled a strong work ethic, and my grandmother had

a big influence as well. The sentiment 'behind every successful man is a strong woman' is true, and I'm grateful for my wife and the influence she has in my life. Beyond people, my Christian values also play an important role in my life.

Texas A&M has a quote: 'Aggies don't lie, cheat, or steal, or tolerate those who do.' In everything, I try to apply that mentality of integrity, loyalty, and honesty.

It was a lot of work in a short time, but we are seeing the benefits. Our control of the supply chain, products offered, service levels, visibility, and costs have all noticeably improved. For instance, from the time we place an order until it delivers is now fewer than seven days. Previously, it could have been as high as 15 days, or longer.

From an early age, I knew I wanted to pursue a career related to math and science, and chose industrial engineering as my major at Texas A&M. I saw that as having many pathways.

During a Christmas break, I worked as a holiday helper for UPS and thought it was fascinating. That catapulted me into my career with UPS, where I was immersed in the world of logistics.

When an opening for an industrial engineer arose at The Container Store, I thought, "Man, you hear good things about that company. I'd love to go work for them." I eventually went into store operations improvement. We had the opportunity to optimize many non-customer-facing activities, taking the artistry out of them

and applying science in a fun way.

In every job I've been in, I define it as I go. Most of the opportunities have been a new venture or strategy the company is taking on. In an environment where new capabilities are being introduced, there has to be a balance between magnitude of change and adaptation.

You have to be selfless and choose the biggest benefit for the organization, rather than trying to push your own agenda. If you get to the finish line by yourself, you haven't done a great job. ■



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NOTED

THE SUPPLY CHAIN IN BRIEF

GOOD WORKS



Third-party logistics firm **Sunset Transportation** arranged transportation and logistics for the Greater St. Louis Area Boy Scouts of America food drive, **Scouting for Food**. Sunset coordinated the collection, transport, and delivery of 731,982 pounds of boxed and canned food valued at \$2.24 million for the Scouts.

Refrigerated carrier **Hirschbach Motor Lines** hauled four loads of Remembrance Wreaths for **Wreaths Across America**. Each year on National Wreaths Across America Day, wreaths are laid

on the graves of fallen U.S. military personnel at 1,100 locations around the world. The wreaths carried by Hirschbach were used at four different ceremonies held at veterans' cemeteries across the nation, and all four Hirschbach drivers who moved the wreaths are veterans.

ALC Flatbed, a subsidiary of third-party logistics provider Allen Lund Company, paid to transport two 40-foot sea containers of lumber and nails to Haiti. The equipment assists **Mission Haiti** in its continuing efforts to rebuild churches and schools destroyed by Hurricane Matthew.

SHOVEL READY

Terminal operator **GCT USA** and the **Port Authority of New York and New Jersey** broke ground on Greenville Yard, an ExpressRail Port Jersey facility. The intermodal facility—scheduled for completion in mid-2018—supports the port's increasing number of rail lifts and higher percentage of East Coast market share. The intermodal yard will have an annual capacity of 250,000 container lifts, or 430,000 TEUs.



GREEN SEEDS

Route planning software firm **Maxoptra** received the **Fleet Supplier 2016 Fleet Hero Award** from the Energy Saving Trust in recognition of support provided to help fleet operators reduce carbon emissions. The award recognizes Maxoptra's proactive approach to reducing carbon footprints by making route planning and scheduling available to fleets of all sizes, instead of just large operations.



m&a

NFI, a supply chain services provider, acquired Canadian third-party logistics company **Dominion Warehousing & Distribution**. The deal helps NFI expand its footprint in Canada with services including freight brokerage, global freight forwarding, asset-based transportation, and value-added warehousing and distribution.

UPS purchased **Freightex**, a United Kingdom-based asset-light provider of truckload, less-than-truckload, specialized, and refrigerated services. The acquisition helps UPS establish a greater presence in the European third-party transportation market.

Supply chain management firm **Dunavant Global Logistics Group** acquired **John M. Brining, Inc.**, a Mobile, Ala.-based private customs brokerage that specializes in customized shipping solutions. The purchase increases Dunavant's footprint in Alabama and the surrounding region.

Cloud-based transportation management systems (TMS) firm **Princeton TMX** bought the shipper software business of **TransWorks**, a subsidiary of Norfolk Southern Corporation. Through the deal, Princeton acquired TransWorks' TMS solution, which has successfully managed shipments for agribusiness, building products, chemicals, forest products, metals, packaging, and a diverse range of manufacturers.

UP THE CHAIN



◀ **Benny Mantin** has been appointed director of the **Luxembourg Centre for Logistics and Supply Chain Management (LCL)**. The LCL is a collaboration between MIT and the Luxembourg government with a mission to train supply chain experts, conduct leading-edge research, and partner with the business community. The LCL forms one part of MIT's Global Supply Chain and Logistics Excellence Network.

Recreational vehicle retailer **Lazydays** appointed **Srinivas Kuchipudi** vice president of operations and supply chain. Kuchipudi oversees the procurement and management of vehicles, parts, and accessories, and is tasked with developing a best-in-class inventory management system.

SEALED DEALS



▲ **DHL** began a global partnership with **Gavi, the Vaccine Alliance**, a public-private partnership dedicated to increasing vaccine use in lower-income countries. DHL will help deliver vaccines in countries where inadequate medical supply chains exist, and will also help increase the efficiency of those supply chains over the next three years.

▼ **Crowley Logistics**, a division of Crowley Maritime Corp., inked a multi-year contract with the **U.S. Transportation Command**, an agency of the Department of Defense (DoD). Under the terms of the deal, Crowley provides less-than-truckload, truckload, expedited, and refrigerated trucking

services to vendor facilities, DoD warehouses and depots, and U.S. military installations in the United States and Canada.

Furniture retailer **Nebraska Furniture Mart** implemented **Logility Voyager Solutions**, an integrated supply chain solution from supply chain software firm **Logility**. The solution improves the retailer's forecast accuracy and customer service, optimizes freight operations, and fosters increased collaboration with partners and vendors.

Global third-party logistics provider **XPO Logistics** signed a deal with engine manufacturer **Cummins** to operate a 1 million-square-foot primary parts distribution center in Memphis, Tenn. The facility distributes component parts, rebuild kits, and remanufactured engines to restock Cummins warehouses around the world, and also supports thousands of Cummins dealers throughout North America.



recognition



The Missouri Division of Workplace Development recognized supply chain solutions provider **Averitt Express** for its commitment to hiring military veterans. Currently, more than 20 percent of Averitt's workforce have served in the U.S. military, and the company has pledged to add an additional 1,200 veterans by 2020.

Roger S. Penske, chairman of the **Penske Corporation**, received a **2017 Horatio Alger Award** from the Horatio Alger Association of Distinguished Americans, a non-profit dedicated to honoring the achievements of outstanding individuals and encouraging youth to pursue higher education. The award recognizes corporate leaders who have succeeded in the face of adversity.

Institutional Investor magazine named **David Congdon**, CEO of **Old Dominion Freight Line**, the **Best CEO** of the **2017 All-America Executive Team**. The annual awards rank the best investor relations programs in 45 industry sectors. Congdon ranked number one in the Airfreight and Surface Transportation sector, and number three overall.

John Deere honored supply chain solutions company **Ryder System** with the distinction of **2016 Partner-Level Supplier** in its Achieving Excellence Program for the second year in a row. Ryder received the rating for providing outstanding service and products, and for its commitment to continuous improvement.

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TRENDS

SHAPING THE FUTURE OF LOGISTICS



Trump Administration: Make America Freight Again

by Jason McDowell

Promises to repair, restore, and improve U.S. infrastructure became one of Donald Trump's primary campaign themes. Now that his term has officially begun, his administration has taken steps to follow through on those promises. The President's team created a list of 50 infrastructure projects that will be a top funding priority.

The proposed \$137.5 billion in projects contained in a list presented to the National Governor's Association features a wide array of electric, transit, waterway, air, and high-way projects. A similar document proposing a nearly identical list of projects funded 50/50

by public-private partnerships is also circling Congress and the business community, according to documents obtained by McClatchy's *Kansas City Star* and *The News Tribune*.

See the chart (page 22) for some projects pertaining directly to cargo transport.

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PROPOSED CARGO TRANSPORT PROJECTS

PROJECT	LOCATION	COST	PURPOSE
Gateway program	Newark to New York City	\$12 billion	Rebuild the Northeast Rail Corridor
The Brent Spence Bridge	Ohio and Kentucky	\$2.5 billion	Relieve traffic delays on I-75
Locks/Dams 52 & 53 on Ohio River	Ohio/Mississippi rivers	\$3 billion	Reduce delays on critical choke point between waterways
I-95 critical highway repairs	North Carolina	\$1.5 billion	Repair major freight corridor
15 bridges on I-95	Pennsylvania	\$8 billion	Repair 15 structurally deficient bridges
Mississippi River shipping channel dredging	Port of South Louisiana	\$1 billion	Deepen channel to accommodate deep-draft vessels coming through Panama Canal
NextGen air traffic control system	United States	\$10 billion	Update national air traffic control to satellite-based model
Savannah harbor expansion	Port of Savannah	\$706 million	Deepen outer harbor to 49 feet and Savannah River channel to 47 feet
Gordie Howe International Bridge	Michigan/Ontario	\$4.5 billion	Connect I-75 and I-94 to improve cross-border traffic flow
The Peace Bridge	Buffalo, N.Y.	\$700 million	Improve cross-border traffic flow across upper Niagara River

Lock it Down: Reducing U.S. Cargo Theft Threats

Wherever someone is trying to make an honest buck, someone else is probably trying to make a dishonest one. Cargo theft accounted for more than \$175 million in lost goods in 2015, according to a report by analytics firm CargoNet and third-party logistics firm AFN Logistics. The report analyzes cargo theft data between July 1, 2013 and July 1, 2016.

It's up to everyone from the truck driver to the warehouse employee, all the way to the vice president of supply chain, to make

sure goods are stored and transported as safely as possible to minimize loss.

The good news is that companies can take firm measures to slow cargo theft. These measures include:

- **Screen employees.** Background checks on drivers, warehouse employees, and all parties involved in shipments are a must.

- **Upgrade technology and security measures.** Vibration sensors, geo-fencing, tamper alarms, and remote paging number

among effective technologies. Drivers should also be instructed not to stop in the first four hours or 200 miles.

- **Establish a risk management team.** Whether third-party or in-house, having a team in place enables quick response.

- **Know your recovery network.** Maintain open lines of communication with all levels of law enforcement to enable quick reporting.

- **Stay informed.** Know where and when thefts are occurring and what is being stolen to enable proactive measures.

Cargo Theft Hot Spots

The following 10 counties reported the highest number of cargo theft incidents. Companies operating in these areas should be especially wary.

- | | |
|----------------------------------|------------------------------|
| 1. Los Angeles County, Calif. | 6. Harris County, Texas |
| 2. Dallas County, Texas | 7. Tarrant County, Texas |
| 3. San Bernardino County, Calif. | 8. Middlesex County, N.J. |
| 4. Cook County, Ill. | 9. Will County, Ill. |
| 5. Miami-Dade County, Fla. | 10. Riverside County, Calif. |

Within these counties, cargo theft incidents recurred in the following locations:

- | | |
|--|-------------------------------|
| 1. Warehouse/distribution center: 329 thefts | 3. Parking lot: 170 thefts |
| 2. Other: 295 thefts | 4. Secured yard: 166 thefts |
| | 5. Unsecured yard: 120 thefts |

State of the Supply Chain

The supply chain outlook is relatively optimistic. That sums up the 2017 *State of the North America Supply Chain* survey by logistics provider Averitt Express, which surveyed 2,200 shippers from myriad industries in late 2016.

Shipper confidence took a healthy jump, with 73 percent of shippers expressing certainty that shipping volumes will increase in 2017, up from 68 percent in

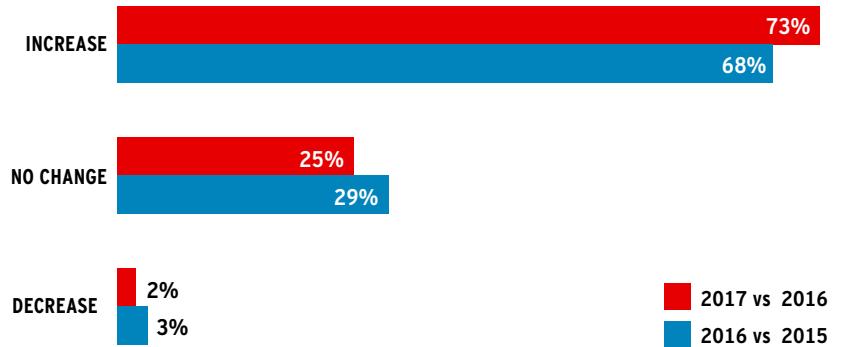
2016. Increased gross domestic product in the third quarter and promising retail sales figures for the peak holiday season have shippers feeling bright as they ride the positive wave into the new year.

The outlook for rail services doesn't look quite as optimistic, however. While the decrease in respondents who say they will use intermodal services in 2017 was only 4 percent, the number who selected "no" instead of "interested" dropped by a sharp 17 percent. This reflects Intermodal Association of North America data that shows total intermodal volume fell 4.6 percent year-over-year in the third quarter of 2016. As such, rail will likely have a rough start in 2017, but in response, shippers should see lower rates for intermodal offerings down the line.

Looking back at 2016, the diversity of supply chain services used by shippers decreased. Despite that fact, expedited air,

SHIPPERS MORE OPTIMISTIC ABOUT 2017

When shippers were asked if they felt shipping volumes would increase or decrease in 2017, the results were slightly more optimistic than the previous year.



SOURCE: 2017 State of the North America Supply Chain survey, Averitt Express

flatbed, and dedicated services all posted minor gains. Additionally, shippers state that they still suffer adversely from the driver shortage, which caused capacity issues at a similar rate to 2015.

Other service performance issues also remained about the same as 2015, suggesting that shippers and logistics providers must continue working together to improve. ■

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GLOBAL

THE WORLD AT A GLANCE

by Jason McDowell



Mexican Border Wall Becoming Trade Barrier

The battle over NAFTA renegotiation and trade between the United States and Mexico has been tied into the building of the border wall between the two nations promised by President Donald Trump on the campaign trail. Mexican President Enrique Peña Nieto refused to discuss the idea of Mexico paying for the wall and the two parties cancelled the summit where they were supposed to discuss trade negotiations.

After the cancellation, White House Press Secretary Sean Spicer announced that a 20-percent tax on imports from Mexico was on the table as a method to make Mexico pay for the wall, which could cost as much as \$12 billion by some estimates. Later, the two leaders agreed by phone not to discuss the wall publicly, and

the Trump administration backpedaled on the tax amid complaints that those costs would just be passed on to U.S. consumers.

Many fear a trade war in the months to come. To put into perspective how damaging a trade war could be to both countries, more than \$531 billion in goods passed both ways across the border in 2015. More than 30 percent of Mexico's GDP relies on trade with the United States, and roughly 80 percent of Mexico's exports go north of the border. Conversely, Mexico was the second largest U.S. export market in 2015.

The two countries are incredibly dependent on each other, especially in certain industries, such as appliance and auto manufacturing. Damaging Mexico's economy reduces its buying power, which could hurt U.S. companies exporting to the south.

Even though the immediate fires seem to be out, the problem is far from resolved. The continued disagreement has weakened the peso considerably against the dollar, causing concern for manufacturers and investors in Mexico. The Bank of Mexico spent billions trying to stabilize the country's currency, to no avail. If relations don't stabilize between the two nations soon, a recession in Mexico's future seems likely.

Much of Mexico's growth relies on the current version of NAFTA, so even if the two countries renegotiate terms that the Trump administration deems more fair, Mexico will suffer, and that suffering could backfire by working its way up the supply chain back into the United States. This needs to be taken into consideration when discussing a new trade agreement.

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E-Commerce Companies Continue to Cut Out Middlemen

Amazon has been making U.S. headlines over the past several years for establishing its own logistics infrastructure, but it isn't the only global e-commerce company making plays in the logistics marketplace. Through Alibaba's OneTouch website, shippers can now book cargo space on certain Maersk vessels. Shippers using the online service can bypass their freight forwarder altogether, and simply use Alibaba to pay a deposit and secure a guaranteed rate.

Alibaba currently offers booking on routes from eight Chinese ports to select destinations in Europe and Asia, according to the OneTouch website. Maersk wants to offer its customers "fully digitized customer solutions," and may roll out additional third-party booking in the future, the ocean shipper said in a press statement.

This isn't Alibaba's first step onto the logistics playing field. The company co-founded logistics firm Cainiao in 2013, and retains a 47-percent stake in the company. The e-commerce company also holds a stake in Shanghai-based parcel delivery company YTO Express. OneTouch, which helps small and mid-sized Chinese exporters with customs clearance, air freight, and parcel delivery service was acquired by Alibaba in 2010.

Alibaba's global logistics presence is significantly larger than Amazon's, so the Maersk move shouldn't come as a surprise,



A new partnership enables ocean shippers to reserve space on Maersk vessels through Alibaba's booking service.

especially because Amazon's Chinese freight forwarding subsidiary, Beijing Century Joyo Courier Service Co., has already been booking space for its Amazon containers on ships since October 2016.



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Global Logistics Professionals Fear for Future of Free Trade

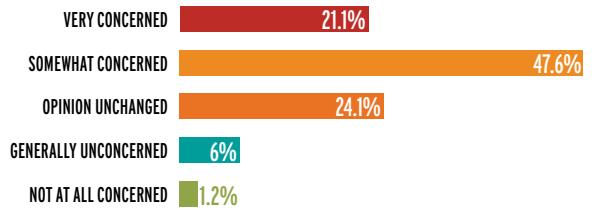
Drastic shifts in global politics in 2016 make logistics executives nervous about the future of global trade, according to the 2017 *Agility Emerging Markets Index*, a survey of more than 800 global logistics professionals by third-party logistics provider Agility and global intelligence firm Transportation Intelligence. The survey ranks emerging markets by factors that make them attractive to logistics providers, freight forwarders, shipping lines, air cargo carriers, and distributors.

While the United Kingdom stands firm on its commitment to exit the European Union, President Donald Trump's administration has now officially shot down the Trans-Pacific Partnership, and relations with Mexico are unstable. With global uncertainty adding fuel to the fire, 69

percent of logistics professionals surveyed say they worry about a retreat from free trade, according to the Agility report (see chart, right). While the International Monetary Fund projects 2017 emerging market growth at 4.7 percent, 43 percent of respondents to the Agility survey say that projection is too optimistic.

Of the 50 countries ranked, including seven of the top 10, 24 experienced year-over-year deterioration in their *Index* scores, which reflects stagnation in global markets. Despite this news, 66 percent of logistics executives say their companies will expand or maintain their posture in China despite any slowdown.

MOST SUPPLY CHAIN INDUSTRY EXECUTIVES ARE CONCERNED ABOUT THREATS TO FREE TRADE*



*From a survey of 800+ global logistics professionals

Other countries powering emerging market growth include India, which climbed to the second position on the *Index* behind China and posts top ranks for market size and attractiveness; United Arab Emirates, which boasts the best emerging market business conditions and best transport and logistics conditions; and Malaysia, which ranks as the top emerging market with a gross domestic product less than \$300 billion.



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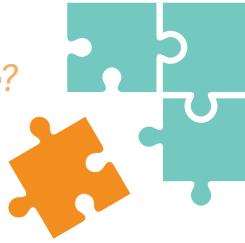
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THE SOLUTION

Partnering with their local Jungheinrich dealer, Dixon Valve demoed the Jungheinrich EKS high-level order picker, putting it to the test in their operation. They found the order picker's long run times – 16 hours on one battery charge – and tight turning radius, helped improve its pick rate and the company meet its rapid delivery commitment.

"Over the course of the shift, an operator on this particular order picker is probably going to get at least 10-15% more picks," says Brian Ford, warehouse manager.

The Jungheinrich order picker is used primarily in an overstock case-pick aisle. Warehouse operator Charles Coleman says, "I can

pretty much get anywhere in the warehouse with this (Jungheinrich) order picker. If I get in a tight spot or somebody puts some pallets somewhere, I can turn the wheel hard one way and stay in one spot as I turn."

Ford also commented on the long run times Jungheinrich offers. "We typically can run this (Jungheinrich) machine two full days before we plug it into the charger. Even on that second day, we have the confidence to know it's going to get us until 7 p.m."



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[IT MATTERS]

BY GLENN JOHNSON

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7 Ways to Digitally Transform Your Supply Chain

To keep the supply chain working at top efficiency, companies need not only a flexible and adaptable culture, but also a highly adaptable underlying IT infrastructure.

Companies invest a lot of time, effort, and money in developing systems to power the supply chain. The amount of data can be overwhelming. However, by connecting data and using an integration platform to orchestrate business processes between systems, data can be the differentiator that enables your company to disrupt processes to increase efficiencies and provide a superior customer experience.

Here are seven examples of how integrated data can introduce new efficiencies into the supply chain.

1. Improved demand forecasting. Better coordination between Enterprise Resource Planning (ERP) and sales systems can result in more accurate forecasts, leading to more efficient ordering and improved margins. Demand-driven logistics based on accurate data reduces transportation costs and inventory while improving competitive advantage.

2. Cross-departmental planning. Integrated data enables business logistics professionals to make decisions based on a comprehensive and accurate picture of supply chain-related activities—sales,

marketing, product lifecycle management, manufacturing, warehousing, procurement, finance, and transportation—across the organization.

3. Segmenting supply chains. Integrating data between your customer relationship management and ERP systems enables you to easily segment customers and products, and develop dedicated supply chains with specific service level agreements to create maximum value at the lowest possible cost.

4. Decide between fast or flawless deliveries. Analyze all supply chain costs together for a unified picture so operational goals can meet corporate values and brand image. Having cost data and variables together in one system enables easy tradeoff analysis.

5. Achieving preferred shipper status. A company that integrates ERP with warehouse management software and yard management software to optimize transportation processes—such as enabling short dwell times and long tender lead times—will be a preferred shipper because those processes boost efficiency.

6. Support for procure to pay.

Control and visibility over the entire lifecycle of a transaction—from the way an item is ordered to the way the final invoice is processed—provides full insight into cash flow and financial commitments. Integrating procure to pay functionality gives ERP systems the ability to extend to the final documents used to verify invoices and confirm that goods were received and signed for.

7. Using Product Lifecycle Management (PLM) systems. Because PLM manages the development of a product and ERP manages the resource planning for production, it makes sense to integrate the systems. Once the design has developed to a point where resources need to be managed to produce the product, an ERP system should have the ability to import and share the latest product data with necessary departments for accurate financial planning.

Data integration across systems can help optimize the supply chain and enable your organization to provide customers with the best possible service from order to delivery. An integration platform that enables businesses to connect data and processes across systems gives your organization the adaptable IT infrastructure it needs to digitally transform the supply chain. ■

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BY TOM GIMBEL

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Share This, Post That. How to Get Millennials on Your Team

Employment in the logistics sector is shifting as millennials are expected to make up about 75 percent of the supply chain workforce by 2025. Companies need to revamp their recruiting and interviewing practices to appeal to this generation.

Companies can create the environment and experience millennials are looking for by following these five steps:

1. Focus on growth. Millennials want to make an early impact at an organization and grow their career. They want to know that if they work hard and succeed, they will be rewarded and have a chance to take on more.

During the interview process, have candidates meet with employees who have been promoted so they can hear firsthand what it takes to succeed. Talk about the different ways your company measures contributions and how quickly someone could be promoted. Give them a clear picture of what their path could look like within your company.

Also highlight the career growth available within the industry. Discuss the strategic role of the supply chain and provide labor market studies or data showing its relevance and growth.

2. Highlight company culture. Many millennials want to develop relationships and seek fulfillment from their jobs. To attract them, create a dynamic

work environment. This extends beyond pool tables and kegerators (although these small refrigerators are appealing) to include a casual dress code, flexible hours and free food, an open-door policy, exposure to senior leadership, and career progression.

Also highlight your team's unique subculture. Whether you're in logistics or procurement, your team culture has characteristics that set it apart.

3. Take advantage of social media. Whether it's Facebook, Twitter, LinkedIn, or Instagram, these platforms are where millennials are interacting and communicating, so your company should do so too. Use social media as another way to highlight the culture.

Post pictures of the office, events, or employees when they're recognized. Share articles about your company. Post pictures of awards and show off fun things that happen around the office.

4. Talk about the bigger picture. According to Deloitte, 77 percent of millennials say that a company's purpose is part of the reason they decided to work

for their employer. Organizations (and teams) should offer an opportunity to give back, whether that's through team-wide volunteering events, matching charitable donations, or paid time off to volunteer for causes employees are passionate about.

If your company has a corporate social responsibility program, highlight that with candidates. Discuss different ways employees can get involved and give back to the community.

5. Follow up. Millennials love to share what their experience with a company was like, whether it's through word of mouth or online via sites such as Yelp or Glassdoor. Be transparent with candidates throughout the application and interview process so that they'll have a positive outlook on your organization.

If you don't extend an offer to a candidate, explain why. If someone else was more qualified or a better cultural fit, share that. Tell candidates when they're no longer in the running for the position. Don't give them a reason to share negative feedback online or by word of mouth.

By following these steps, your company can highlight its offerings and appeal to millennials, who will soon comprise the majority of the supply chain workforce. ■

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[RISKS & REWARDS]

BY PETER LISTON

Senior Director of Global Trade Compliance, Flash Global
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5 Steps to Reduce Supply Chain Risks When Going Global

Natural disasters, huge economic swings, supply shortages, and security issues present considerable challenges to supply chains. One critical area that can bring a supply chain to a screeching halt is international trade compliance.

Whether you're starting out in the global market or already dealing with supply chain issues, these five tips will help you mitigate risk.

1. Take supply chain risk and trade compliance seriously. Many companies spend more time planning the annual picnic than they do mitigating risk. In fact, 90 percent of supply chain executives responding to a University of Tennessee study on supply chain risk management didn't quantify risk as a verifiable threat to their companies.

2. Write and implement strong export/import procedures. Robust compliance policies help you avoid penalties, control costs, and create a reliable supply chain. Buy-in should start at the executive level. Without that support, compliance policy may carry little weight throughout the organization.

When problems arise, regulatory agencies including the Bureau of Industry and Security (BIS), U.S. Customs and Border Protection (CBP), and others consider the strength of a

company's compliance program when they assess administrative penalties for violations. A strong program that includes meticulous recordkeeping, auditing, and self-reporting may help mitigate penalties.

3. Use trade compliance programs. An Export Management Compliance Program (EMCP) and Import Management Compliance Program (IMCP) provide the best insurance against regulatory infractions. These systems assess trade compliance risk by monitoring regulatory requirements and changes, training, recordkeeping, and auditing. EMCP and IMCP teams can recommend and monitor corrective actions when needed.

4. Implement best practices. The following procedures help companies reduce risk and supply chain disruptions:

- Properly classify each item, from components to higher-end assembled items, under both the Harmonized Tariff Schedule for duties and tax purposes, and by jurisdiction (military vs. commercial dual-use).

- Screen parties against the Restricted Party List and Denied Party List published by the U.S. government and the United Nations, as well as lists published by export control regimes in the regions where you do business.

- Verify requirements for countries of origin and destination. Export/import laws regulate a shipment's country of origin, declared value of goods, destination country, purchaser, and buyer.

- Set "Reasonable Care" standards within your policy. Refer to CBP (CBP.gov) and BIS (BIS.doc.gov) standards.

- Ensure all documentation complies with export and import regulations.

5. Consider a supply chain solutions provider. Many companies lack the personnel and expertise to monitor trade compliance and manage supply chains. Specialized supply chain solutions providers help companies enter the global marketplace quickly with customized, end-to-end supply chain solutions.

While the rewards of global operations are substantial, so are the risks. Compliance failures delay shipments, disrupt operations, and negatively impact your bottom line. Having a skilled team to manage the supply chain and mitigate risk is crucial when seeking long-term success in global markets. ■

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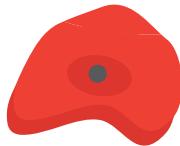
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The 6 essential competencies for gaining a foothold in a supply chain or logistics career.

By Merrill Douglas



Whether you attend business school, engineering school, or the school of hard knocks, there's more than one educational path to a career as a supply chain professional. Whichever route you take, you need to develop certain crucial knowledge and skills along the way.

Opinions vary on which competencies are most crucial—and, of course, the list also depends on the type of supply chain role you plan to take on. But after talking with leaders at some university programs and with corporate executives, we've compiled a list of six essential areas where graduates embarking on supply chain careers need to excel.

1 Nuts and Bolts

Obviously, you have to start with the essential concepts. "We want candidates to have a basic understanding of supply chain," says Kathryn Mullen, senior director of talent management at Atlanta-based third-party logistics (3PL) services company Americold. When Americold chooses applicants for its internship programs and early career positions, one criterion is a background in courses that teach supply chain processes.

Understanding logistics processes is also an important competency for candidates who apply to work at 3PL Dachser USA. "Those processes include the intricacies of transportation—in our case, international transportation—via air freight and sea freight," says Frank Guenzerodt, president and CEO of the Atlanta-based company. "They also include warehousing, contract logistics, and inventory management."

To give students that foundation, some programs take a broad, end-to-end approach. Penn State University is one such program. "Our students today see everything from planning and forecasting all the way to delivery at the final point of demand," says Robert Novack, associate professor of Supply Chain and Information Systems at Penn State's Smeal College of Business in State College, Pa. The program bases its curriculum on the APICS Supply Chain Operations Reference (SCOR) model, which encompasses six basic processes: Plan, Source, Make, Deliver, Return and Enable. Penn State offers an undergraduate major in supply chain management, plus MBA and PhD degrees with concentrations in that discipline.

The University of Tennessee (UT), Knoxville also uses the SCOR model to define the content areas covered in its supply chain management programs. Those programs include a bachelor's degree in



Students in the University of Tennessee's supply chain program participate in simulation exercises that require them to work out issues in a cross-functional team.

business with a supply chain major and an MBA with a supply chain concentration.

"We take an applied, end-to-end approach," says Chad Autry, William J. Taylor Professor of Supply Chain Management and head of the business school's Marketing and Supply Chain Management program.

UT also teaches how supply chain components work together as an integrated whole. Of course, it's important to take a deep dive into individual disciplines. "But then, our emphasis in every course is on how your decisions influence other functionalities in the supply chain," Autry says.

As a professional, while you might concentrate on cutting logistics costs or eliminating damages, ultimately you must consider how your initiatives affect your company's balance sheet and income statement, he adds.

To teach students that holistic approach, UT uses digital and physical simulations, among other tactics.

"At the beginning of the program, we put students in an environment where they have to manufacture a product using Legos, marbles, or poker chips," Autry says. Students discover that if each group in the exercise perfects just the functions in its own silo, that hampers the overall system.

Later, students tackle more challenging simulations. "These allow them to figure out how to sub-optimize the functions in order to optimize the whole," he says.

In the W.P. Carey School of Business at Arizona State University, students in several supply chain and logistics programs get an overview of the industry in an introductory course, followed by courses on operations, logistics, and procurement. "Then we have a capstone class to tie that

all together," says John Fowler, Motorola Professor of International Business and former chair of the Supply Chain Management Department at the university, in Tempe, Ariz.

Arizona State offers a BS in Supply Chain Management, a BA in Global Logistics Management, an MS in Global Logistics, an optional supply chain specialization within its full-time MBA program, and a PhD in Supply Chain Management.

2 Tools and Methodologies

Like their counterparts in business school, students in supply chain programs in engineering schools learn to combine all the components of a supply chain into a well-functioning whole. Engineering programs place special emphasis on mastering the tools you need to produce that outcome.

"The main core competency we provide is how to model supply chain systems," says James Noble, a professor in the Industrial Manufacturing Systems Engineering Department at the University of Missouri. His department offers an undergraduate degree with a concentration in logistics.

Missouri's program includes four courses that teach tools used in modeling—linear optimization, stochastic modeling, simulation, and data analysis. As part of their capstone coursework, industrial engineering students use those tools to conduct real-world projects for companies. About half of those students work on projects related to the supply chain.

Although the University of Michigan's one-year MS in Supply Chain

Management is part of the Ross School of Business, it approaches the supply chain from both the managerial and the engineering perspectives.

"There are a lot of analytics involved in solving supply chain management-related problems, whether it's a network design problem, an inventory management problem, or something else," says Ravi Anupindi, David B. Hermelin Professor of Business Administration, professor of Operations Management and former faculty director of the Masters of Supply Chain Management program.

It takes specialized tools and methodologies to solve such problems. Students at Michigan learn optimization, statistics, and other techniques for extracting knowledge from data. The Ross School also partners with software provider Llamasoft to give students experience in modeling supply chain networks.

Students in Arizona's supply chain and logistics programs all take a business analytics course that covers data analysis, data mining, data visualization, and various kinds of modeling. They do much of that work with a tool called Risk Solver Platform for Education (RSPE), an add-on to Microsoft Excel. "Then we try to build upon that in the other classes by forcing students to use some of that knowledge," Fowler says.

The analytics class also provides experience with the SAP enterprise resource planning (ERP) system—not to learn that product in depth, but to become familiar with the capabilities found in that category of solutions.

At Pennsylvania's Lehigh University, the methodologies that students master include risk mapping. "We identify risks and then we look at the probability of occurrence, and the impact of that risk," says Robert Trent, director of Lehigh's Supply Chain Management program, which offers an undergraduate degree plus an MBA with a supply chain concentration.

Students learn to consider risks such as the chance that a supplier might go bankrupt, or that natural disasters or political turmoil can cause supply interruptions. They practice risk assessment skills in exercises that might, for instance, ask them to identify the supply chain risks a company faces, categorize those risks, and devise



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strategies for prevention or mitigation.

In addition, courses at Lehigh cover methodologies such as Lean Six Sigma, group problem solving, and value analysis.

Like their peers on many other campuses, supply chain students at Lehigh also learn how to extract sophisticated knowledge from the masses of information that businesses collect in the course of their operations. “Many students take the Business Information Systems minor, where we have a class on big data—predictive analytics,” Trent says.

3 Business Savvy

Because a well-run supply chain is crucial to a company’s success, supply chain professionals must understand not only the flow of materials, components, and finished goods, but also appreciate how that flow affects the business as a whole. To communicate with colleagues throughout the company, they have to speak the language of business and understand the workings of the businesses that employ them.

“Supply chain doesn’t exist by itself; it’s an integrator across the company,” says Noble. Supply chain professionals should be able to show peers in other departments, in quantitative terms, how supply chain improvements will benefit the business.

The industrial engineering program at Missouri doesn’t include business courses, but supply chain majors can take business electives. About one-quarter of those majors opt for a five-year program that lets them earn both a bachelor’s degree in engineering and an MBA, Noble says.

Missouri’s students further sharpen their business perspective when they work with companies on their capstone projects.

“Over the course of one year, they work with managers, line people, engineers—the whole group,” Noble says. “That in itself becomes very multidisciplinary.”

UT’s programs also integrate supply chain concerns with general corporate issues. “We see the supply chain through a business lens, rather than a purely operational lens,” says Autry. Courses examine how supply chain decisions affect not only operational metrics, but all financial metrics.

“It’s about total landed profit, rather than creating a better fill rate or reducing total spend—driving it all the way, as high in your organization as possible, financially,” he adds.

Students aiming for managerial positions in supply chain must learn to think about how the supply chain interfaces with other elements in the organization, and also how the supply chain of one company interfaces with the supply chains of other companies. “Students need to learn about the challenges in managing those interfaces, which are more organizational challenges,” says Anupindi. “How do you work with other people, how do you get other people to see your viewpoint?”

You can’t work out those issues on a spreadsheet. “It’s a managerial skill set that students learn,” he says.

Along with risk management, financial management has emerged as an important new emphasis for the programs at Lehigh University. The school added finance to the curriculum because industry leaders now understand that supply chain management is central to a company’s business strategy.

If a supply chain manager tells corporate executives that inventory is now turning four times each year instead of three, that won’t mean much to the executives. It’s much more useful to demonstrate the impact of that faster turn on a corporate indicator such as return on assets. “The language of business is finance,” Trent says. “Corporate people aren’t going to learn the language of supply chain; you’re going to have to speak their language.”

4 Global Outlook

In an increasingly global economy, a strong international perspective is crucial for anyone who wants to advance in

a supply chain career. As an international 3PL, Dachser favors candidates who have a good grasp of geography and understand trade agreements, Guenzerodt says.

Even more than that, supply chain professionals at Dachser must appreciate how cultural norms vary around the world.

“Our people need to know how to deal with their counterparts in China, Europe, and Latin America,” Guenzerodt says. “There are intricacies of day-to-day business that come from cultural differences.”

Spending a semester abroad, or conducting a project that involves international travel, might give candidates an advantage. “But they should at least understand the cultural differences—for example, how you address people in Asia versus Europe,” Guenzerodt adds.

Speaking a foreign language can be helpful—for example, learning Spanish or Portuguese in order to conduct business in Latin America, Guenzerodt says. Because English is the language of international business in Asia and Europe, students don’t necessarily need to master Mandarin or even French. But they do need to understand the subtleties of communicating in English with non-native speakers. “They may say things that sound different in American English from what they actually mean,” he adds. Real communication in such cases demands tolerance and flexibility.

Learning a foreign language, becoming familiar with other cultures, or traveling to unfamiliar places can all give a student an advantage in the job market, Autry says. The program at UT tries to push students into the international scene as early as possible, and nearly 50 percent of its students gain some kind of international experience before they graduate. That experience might come from a semester abroad, or it might come through one of the 30-day mini-courses the university offers overseas.

“You’ve got to get out into another country that makes you a little uncomfortable,” Autry says, adding that a semester in Toronto, for example, might not deliver the necessary sense of dislocation. UT has been developing programs in South America, Central Europe, and China and has also sent students to Australia and New Zealand.



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5 Soft Skills

For all the emphasis supply chain programs place on the mechanics of the supply chain and the tools you need to manage one, it takes something more to launch a successful career. “We look for leadership capability,” says Mullen at Americold. “It’s great if candidates have the hard skills. But if they don’t have the soft skills and the ability to influence their peers, it’s not necessarily a winning combination.”

Autry agrees. “We hear from our industry partners especially, and also from students who come back after graduation, that soft skills still matter.” Logistics professionals need to develop a high social IQ, become fast on their feet, know how to make presentations, and know how to negotiate or collaborate with a supplier. “Those are skills that business schools don’t teach, but that businesses require in order for the supply chain to work,” he says.

Professors in UT’s supply chain program constantly look for new ways to help students develop those soft skills, Autry says. For example, students do exercises to learn how to develop relationships with suppliers or customers. “We try to get them to understand that just because you have an interest doesn’t mean the other party sees it the same way,” he says. “They need to work on that together.”

Students also do simulation exercises that require them to work out issues in a cross-functional team. “We try to get people to see the world through the eyes of other people in their business,” Autry says. “Students start out thinking that everyone is looking at an issue in the same way, and then they discover this is not the case.”

At Missouri, professors spend a lot of time teaching supply chain students how to communicate and sell their ideas, both in writing and in person. To polish presentation skills, each student in the capstone course makes a presentation just about every week. “Sometimes they get graded on what they present,” Noble says. “But they also get graded on the critiques they provide to other groups.”

Students also learn to communicate concisely, paring a message down to three or four minutes—“learning, effectively, how to deliver a TED talk,” Noble says.

Of course, students also face many opportunities to develop soft skills outside the classroom. An interviewer at Americold might ask a candidate about summer jobs, on-campus clubs, or other settings that gave them leadership opportunities. “We might also say, ‘Tell me about a time when you were part of a group and you had to serve as an informal leader’—to be able to assess what people have done in real-life situations,” Mullen says.

6 Real-World Experience

When you want to show a potential employer that you know your stuff, there’s nothing like a resume that features experience with a company in your industry. A student in a supply chain management program usually gains that experience through one of two routes—doing a project for a corporate sponsor as part of the coursework, or working in a supply chain capacity through an internship or co-op.

Michigan’s Master of Supply Chain Management program includes a course that sends teams of two or three students to work as consultants for corporations. “There are clear deliverables for the company’s project outcomes,” Anupindi says. The course is open to supply chain management students and to MBA candidates who are interested in the supply chain.

A few years ago, for example, a student team worked with Cummins Engine in Columbus, Ind., exploring whether a Cummins joint venture in China should modify its strategy for remanufacturing. “Also on the table was whether the China remanufacturing facility should have an import strategy, taking engines from that region, bringing them into China for remanufacturing, and sending them back,” Anupindi says.

Among other things, students had to consider import regulations and whether to relocate the plant closer to a seaport.

A supply chain student who participates in Penn State’s Schreyer Honors College may do a project for a company as a senior thesis. In one recent project, a consumer packaged goods company gave a student a summary of its freight bidding process—a spreadsheet 60,000 lines long



Penn State students are exposed to all components of the supply chain, from planning and forecasting to delivery at the final demand point.

and 24 columns wide. “They wanted her to develop what I call a post hoc analysis, to see how well they did on their bids,” Novack says. “She found around \$7 million in potential savings left on the table.”

Americold sponsors nine-week summer internships, each with its own objectives for skills the intern should gain. “At the end, there’s a capstone project where the interns have to present to a broad group about what they learned,” Mullen says.

One recent internship focused on safety at the 3PL. “They worked on all types of operations in the facility, but they focused on what types of safety training we were doing,” Mullen says. “Were we ensuring that all associates were trained? How could we improve the process and the tracking?”

At Arizona State, about 90 percent of supply chain students do at least one internship, says Fowler. Most of the others work part time while attending school, so nearly every-one graduates with practical experience.

Not only do students learn leadership skills through those experiences, but they also gain more appreciation for material they cover in class, such as the use of spreadsheets. “Their Excel skills almost always improve, because they end up doing projects in the company that require it,” Fowler says.

In addition, once students see supply chain principles in action at a company, they return to class prepared to hold much richer discussions. “When they hear from each other about things they’ve done in internships, it can be more powerful than what they hear from the faculty,” he adds.

The best university programs blend theory, practice, and practical experience to help students make a smooth transition to employment. Having gained essential knowledge about the supply chain and mastered crucial skills, these graduates are well-positioned to begin the climb toward rewarding careers. ■

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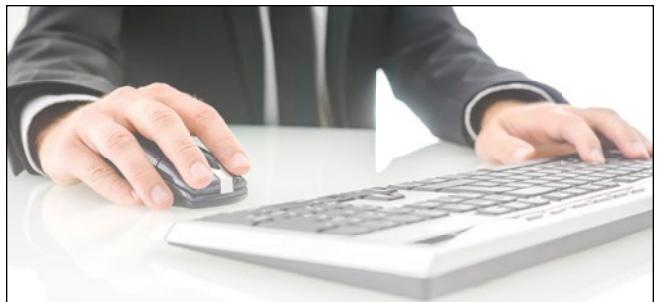
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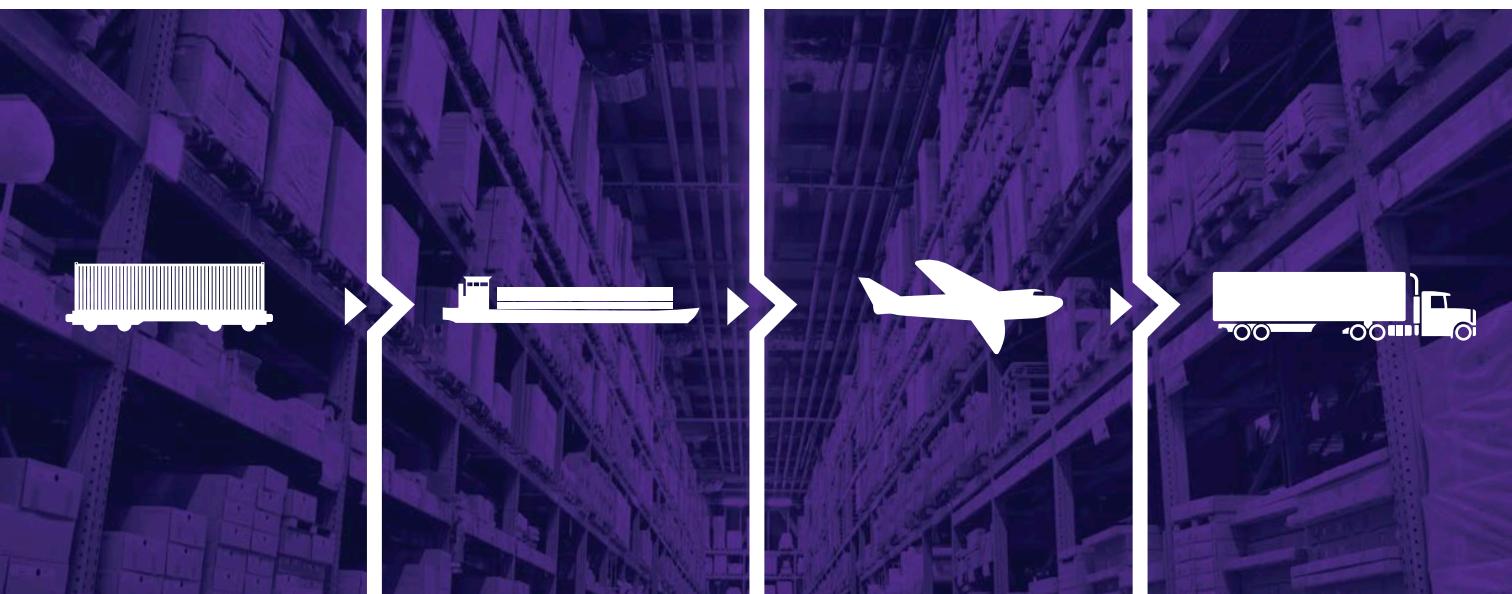
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APICS	apics.org 773-867-1777	59															●	●			●	●	●	●	●	●
Arizona State University, W. P. Carey School of Business	wpcarey.asu.edu 480-965-5187	15	●	●	●	●		●	●	●												●	●	●		
Auburn University	harbert.auburn.edu 334-844-2460	43	●	●					●				●		●							●	●			
Bellevue University	bellevue.edu 800-756-7920	11	●		●		●	●		●				●									●			
Broward College	broward.edu 954-201-7350	10	●		●	●							●				●	●				●	●			
Bucknell University	bucknell.edu/ management 570-577-1337	DNR			●		●															●				
California State University Dominguez Hills	csudh.edu/ee 310-243-3741	9	●		●		●	●		●	●		●		●							●	●			
California State University, Long Beach	ccpe.csulb.edu/citt 562-985-2872	20	●						●				●	●	●				●			●	●	●		●
Clemson University	clemson.edu 864-656-2011	50	●		●		●		●	●	●	●														
Duquesne University	duq.edu 412-396-1774	25	●						●	●													●			
East Carolina University	ecu.edu/cs-bus 252-328-6368	40+	●	●	●	●	●			●	●		●									●	●			
Elmhurst College	elmhurst.edu 630-617-4100	DNR	●						●	●													●			
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Georgia Southern University	coba.georgiasouth- ern.edu/lscm 912-478-1498	30	●		●		●	●			●												●	●		
Georgia Tech Supply Chain & Logistics Institute	scl.gatech.edu 404-894-2343	70											●	●	●	●							●	●	●	●
Guilford Technical Community College	home.gtcc.edu 336-334-4822	10											●													
H. Milton Stewart School, Georgia Institute of Technology	isye.gatech.edu 404-894-2300	92		●			●	●	●		●		●	●	●	●						●	●	●	●	●

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Indiana State University	indstate.edu/business 812-237-2000	5	●	●	●	●	●		●	●				●									●			
Institute for Defense & Business	idb.org 919-969-8008	19			●	●				●		●		●	●					●		●	●			
Iowa State University	business.iastate.edu 515-294-3659	DNR	●	●	●		●	●	●	●	●	●										●	●			
John Carroll University	jcu.edu 216-397-4386	50	●																			●	●			
Kansas State University	cba.k-state.edu 785-532-6296	30			●		●		●			●	●	●		●	●					●	●			
Kent State University	kent.edu/business 330-672-2282	5							●																	
Lehigh University	lehigh.edu 610-758-4433	21	●	●	●	●	●		●	●		●	●	●	●							●	●	●	●	●
Maine Maritime Academy	mainemaritime.edu 207-326-2212	25	●	●	●		●		●			●				●	●	●		●		●	●	●		
Michigan State University	broad.msu.edu 517-353-6381	64	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Missouri State University	missouristate.edu 417-836-5413	10+	●	●	●				●	●																
MIT Sloan Executive Education	executive.mit.edu 617-253-7166	10+											●	●	●	●							●	●		
Mount Royal University	mtroyal.ca 403-440-5000	12	●		●		●	●				●	●		●							●	●			
NC State University Poole College of Management	poole.ncsu.edu 919-515-5584	25			●		●		●	●		●		●								●	●	●		
Niagara University	niagara.edu/ supplychain 716-286-8160	45	●	●					●			●			●							●				
Northeastern State University, Oklahoma	nsuok.edu 918-444-2900	9	●		●		●									●	●					●	●			
Northeastern University	damore-mckim. northeastern.edu 617-373-3232	30+	●	●	●		●		●	●		●	●	●								●	●	●		

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Ohio State University	fisher.osu.edu 614-292-9695	100	●	●	●	●	●	●	●	●	●	●	●	●	●							●	●	●	●	●
Penn State Executive Programs, Smeal College of Business	psep.smeal.psu.edu 814-865-3435	49											●	●	●	●						●	●	●	●	●
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University of Rhode Island	uri.edu 401-874-1000	12	●		●	●	●			●	●	●	●	●	●	●	●	●	●	●			●			
University of Rhode Island, College of Business	web.uri.edu/business 401-874-4348	8	●	●	●		●			●	●	●	●	●			●						●	●		
University of San Diego, School of Business	sandiego.edu/business 619-260-4860	DNR		●	●		●			●	●	●			●							●	●			
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University of South Florida	usf.edu 813-974-4201	26		●	●		●			●	●	●	●	●	●								●			●
University of Southern Mississippi	usm.edu/construction 228-214-3237	7	●	●	●		●	●														●	●			
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University of Toledo	utoledo.edu 419-530-2558	30+	●	●			●			●												●	●			
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PLACING A PREMIUM ON CARGO INSURANCE



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Buckle up! Cargo insurance protects your goods if they are damaged, stolen, or lost while in transit.

By Karen Kroll

As supply chains grow lengthier and encompass more players, shippers face a greater chance that their materials or components will be damaged, stolen, or lost along the way. “Shippers today are taking on a lot more risk,” says Mark Bernas, assistant vice president, ocean marine, with insurer CNA.

In 2015, losses due to cargo theft hit \$22.6 billion, according to BSI Group’s *Global Supply Chain Intelligence* report. And, in November 2016 alone, the Transportation Asset Protection Association recorded 231 freight thefts in the EMEA (Europe, Middle East and Africa) region. The average loss topped 60,000 euros, or about \$64,000.

Cargo insurance, which covers products in transit, can protect against these risks. Although it is sometimes referred to as “marine insurance,” cargo insurance can cover shipments moving via ship, truck, rail, and/or air, depending on the policy.

“Any time you’re shipping something where you have an insurable interest, you should look into protecting the goods,” says Karen Griswold, senior vice president of ocean marine for insurance provider Chubb Ocean Marine, North America.

Many instances of cargo theft go unreported, as companies want to avoid the publicity. Half of cargo premium dollars go to cover theft, estimates David Lee, director, inland marine with insurer Tokio Marine America. Lee also chairs the transportation committee of the Inland Marine Underwriters Association (IMUA).

Theft, of course, is only one type of loss. About 2,700 containers were lost at sea each year between 2011 and 2013, according to the World Shipping Council. Weather, temperature changes, breakage, and other events can also damage cargo.

While the risk of cargo loss is real, the decision to purchase insurance usually rests with the shippers. They typically have no legal obligation to carry this coverage, although some financial institutions may require it before they'll lend money.

DIY Insurance

Companies with strong balance sheets may decide they can withstand a cargo loss and essentially self-insure. Businesses that take this approach need to regularly assess their exposure and loss data, and use their analyses to check the adequacy of their reserves, recommends Mark Robinson, vice president, global operations, with UPS Capital.

Ensign-Bickford Industries Inc., a global

science and technology organization that operates in the aerospace and defense sectors, tailors its use of cargo insurance to the types and volumes of business it is doing, the locations it is shipping to, and shipping terms, says Rick Roberts, director, risk management and employee benefits and former president of risk management society RIMS.

Taking Ownership

For instance, when Ensign-Bickford purchases goods on FOB shipping point terms, it doesn't take ownership until the goods arrive at a domestic port. The company needs coverage only from the port to one of its plants. Moreover, these shipments typically travel by truck. Given the size of the products, it's difficult to load enough on a truck to meet the company's deductible. As a result, it often makes sense to self-insure for these trips.

In contrast, Ensign-Bickford recently started shipping to Europe, South America, and the Mideast. The volumes are larger, and some customers have requested the shipments be covered by cargo insurance. "Customers want to make sure if the ship goes down, they'll still get their important products quickly," Roberts adds.

It may seem that the company transporting a shipper's goods would have some

liability if the products don't arrive as they're supposed to. But in most cases, the carriers' liability is very limited.

The industry standard can vary depending on transport mode. An ocean carrier typically is liable for \$500 per customary shipping unit, such as a pallet or container. That means a company that loses a container filled with \$1 million in goods may recover a scant \$500. "Cargo insurance provides more protection," Robinson says.

Some questions a supply chain professional will want to address when considering cargo insurance include: Which parts of the shipping journey are most likely to present risks? Does my company ship products that are prone to theft and/or damage? At what point does my company take ownership of the goods?

"Know the risk characteristics," says Steve Connor, president of Wyvern International Insurance Brokers Inc., Barrington, Ill. That's critical to determining how best to mitigate them.

Companies also need to determine the approach they'll take. Some purchase insurance just for catastrophic events. Others companies' supply chains are prone to more frequent, but less severe events, and they may adjust their deductible to reflect this. "Deductibles can range in amount and vary according to the level of risk companies are willing to absorb themselves," Griswold adds.

The Broker's Role

Cargo insurance can be complicated. It's also less regulated than some other types of insurance. As a result, it can be a "potential minefield for unsophisticated buyers," Connor says.

For these reasons, most cargo insurance is sold through brokers, who are fiduciaries by law. "They represent the customer, not the insurance company," Connor says. Equally important, reputable brokers are experts in pricing, coverage, and other elements of cargo policies.

Brokers also can help companies minimize potential risks in their supply chain, says Ted O'Sullivan, head of Protecht Risk Solutions with Falvey Cargo Underwriting, North Kingstown, R.I. For instance, to take advantage of lower wages, some manufacturers in China have shifted operations from the Chinese coast to central China.

Ocean cargo insurance protects merchandise, goods, and crews aboard shipping vessels and cargo storage during transport.

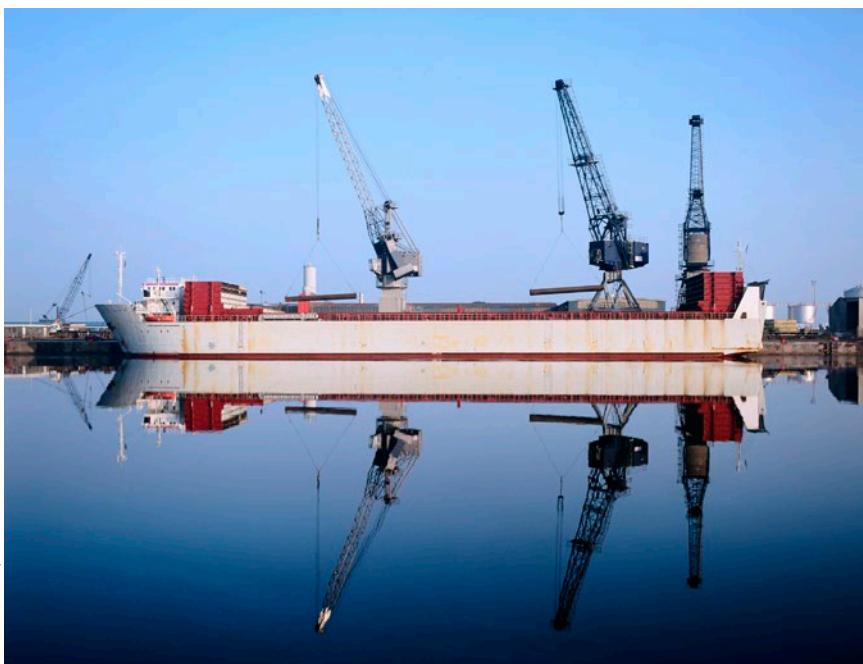


Photo courtesy of CNA

Rather than continue to use ocean transportation, some of the companies moved to the China-Europe Block Train, which spans 8,000-plus miles through Asia, Russia, and eastern and western Europe.

“We had to understand the risks of companies considering a shift from ocean to rail,” O’Sullivan says. Train cars typically aren’t heated, and travel through Siberia at times during winter. In addition, rail cars aren’t always secure, so the goods could be vulnerable to theft.

While many freight forwarders offer cargo insurance, that convenience can come with its own costs. For starters, the shipper is one step removed from the actual insurer, and typically won’t know the freight forwarder’s loss history, both of which will influence price and coverage. “It may be a great policy, but it’s hard to know,” says John Miklus, president of the American Institute of Marine Underwriters.

Companies that ship infrequently may decide the convenience of working through a freight forwarder outweighs any downsides, notes Gordon Adams, vice president, risk management, Servco Pacific Inc., which operates auto dealerships across Hawaii, among other businesses.

They’ll want to continually reassess their decision as the volume and/or value of their shipments increases. Frequent shippers with a decent loss history may find coverage less expensive on their own.

Open Cargo

Shippers also need to decide whether to purchase cargo insurance on a transaction-by-transaction or on an “open cargo” basis. As the term implies, insurance purchased on a transaction-by-transaction basis covers a single transaction. An open cargo policy lasts until it’s terminated, although most companies and insurers review them annually.

Companies that ship infrequently and aren’t overly concerned with loss may find a transactional model adequate. “But once you start getting into high-value goods or sensitive products, you need to make sure you have adequate insurance and take a more proactive risk management approach,” says Mike Falvey, president of Falvey Insurance Group.

Shippers can assess the three V’s to determine when to shift to an open cargo



Carriers or freight forwarders issuing a multimodal bill of lading have full liability by carriage contract over all transport modes for the entire journey.

policy: the value of their shipments, the velocity or frequency with which they ship, and the volume of each shipment. As any of these increase, the case for an open cargo policy becomes stronger, O’Sullivan says.

Warehouse to Warehouse Coverage

Most ocean cargo policies typically offer coverage from “warehouse to warehouse,” says Ralph Santoro, regional manager, ocean marine with Tokio Marine America. If a shipment travels from a U.S. warehouse via truck to a port, and then on a ship to Europe, where it docks and again moves via truck to a French warehouse, many policies will cover the entire journey. “If a loss occurs, we know what policy it’s under,” Santoro says.

Similarly, many bills of lading are titled multimodal, or contain terms and conditions that mention multiple modes of transportation, in case the carrier needs to substitute one form of transportation for another. This might be needed if, for instance, shipments that were scheduled for air transport wind up moving by rail because bad weather grounded the planes.

Correspondingly, shippers’ cargo policies “should be robust enough to handle all modes of transportation,” notes David Pasco, senior account manager with Roanoke Trade, a subsidiary of insurer Munich Re.

An “unnamed location” provision covers a shipment if there’s a break in the voyage and the goods are temporarily stored. “It’s

a catch-all if something happens you can’t control,” Adams explains.

Some cargo policies include provisions specific to the mode of transport or items being covered. For example, an insurer may require a company shipping high-value freight via truck to keep at least two drivers in the truck cab at all times, and to never leave the cab unsecured, Santoro says. Similarly, the insurer may require the shipper to keep the packages free of content descriptions, which could tempt would-be thieves, Santoro says.

Taking Stock

Stock-throughput policies, or STPs, are growing in popularity, Falvey says. These provide coverage for materials as they change from stock to raw materials to work-in-process to finished goods, and whether they’re in storage, a processing location, or on their way to a final delivery.

Adams provides an example: A company delivers vessels of raw tuna to a cannery, where they’re cooked, cleaned, and canned before traveling to a warehouse and then on to their final destination.

“People assume that cargo insurance covers goods to the site, through the value-add processes and the continuation of the voyage, but that’s not always the case,” Adams says. For instance, cargo insurance typically wouldn’t cover spoilage that occurred if the power went down while the fish were in processing. A stock throughput policy—essentially, an enhanced cargo policy—likely would cover the cargo as it’s



being processed. “It’s a broader policy and covers more of the risks you face in this scenario,” he says.

A number of terms and documents are important in cargo insurance policies. The information presented in the bill of lading (BOL), such as the cost and weight of the goods and their starting and ending points, typically is used to determine the value of the goods being insured, Lee says. (The term “contract of affreightment” is used at times. This refers to the agreement under which a ship owner agrees to carry a shipment via water.)

For goods traveling via ship, a copy of the BOL is given to the ship captains, Adams says. If they have to jettison cargo, this is noted on the bill of lading. If a shipment is damaged, the type and extent of the damage also is noted. “These determine the extent to which you can claim cargo loss,” he notes.

Another key piece of information is the point at which ownership transfers from seller to buyer. This typically follows the terms of sale, which are usually stated in the invoice or sales contract. Shippers “have to demonstrate title to goods at time of loss,” Connor says. In contrast to most insurance transactions, shippers may not even own the goods when they purchase a cargo policy. However, to file a claim for a loss, they typically will need to show they had title to the goods when the loss occurred.

General Average

One concept unique to ocean insurance policies is that of “general average.” This comes into play if a ship’s captain determines that to save the vessel, the crew needs to jettison some of the cargo. “It’s called a ‘deliberate sacrifice’ for the greater good,” Griswold says. This can occur because of bad weather, engine trouble, or a fire, among other events.

The idea behind “general average” is that all parties—the shippers and the carriers—benefit when some cargo is tossed overboard. So, rather than place the loss entirely with the company whose products were sacrificed, everyone takes a financial hit.

While the calculations can become complicated, each shipper’s portion generally is based on the percentage value of its goods relative to the combined value of

Incoterms Set the Standard

Incoterms are a way of standardizing terms of trade and indicating when title to a good or service transfers from seller to buyer. “When someone uses these terms, everyone knows their risks and responsibilities,” says Mike Falvey, president of Falvey Insurance Group. “They indicate who’s responsible for the risk of loss.”

One common Incoterm is FOB, or Free (Freight) on Board, in which the seller is responsible for transport of the product to the designated domestic ocean port. Under another, DDU, sometimes referred to as “door-to-door,” the seller maintains title up to the buyer’s door.

all the goods on the vessel, and the ship itself, says Pasco.

After a general average has been declared and the vessel arrives at port, no cargo typically is released until the shipper has posted a general average bond or guaranty. “If you have insurance, it will provide the guaranty,” Bernas says. Companies that don’t have insurance need to come up with a guaranty or some instrument that shows they can pay.

If a vessel completely sinks and there’s no recovery, the general average concept doesn’t come into play. “There’s nothing to be saved from the venture,” Griswold says.

The coverage provided can differ from one cargo policy to the next. “Open cargo insurance” is designed to cover frequent shippers, Robinson says. It typically covers most risks, including damage, theft, piracy, general average, and shipwreck. Losses resulting from cyber attacks, illicit trade, civil and military unrest, and the delayed delivery of time-sensitive or perishable goods tend to be excluded, he says.

Some other specific losses may be excluded as well. Griswold provides an example: a policy for a company that’s shipping intricate machinery might exclude mechanical derangement, or damage to the electrical or mechanical components or workings of the machine.

Many cargo insurance policies are written for what’s known as “CIF plus 10.” This refers to the cost of the goods, plus insurance and freight costs, with 10 percent for profit. If a company presents a claim, it generally will recover CIF plus 10.

Some insurance companies don’t require documentation on the value of the shipment(s) in order to obtain cargo

insurance. However, if a shipper files a claim, the insurer may require an invoice or other information in order to validate the value of the goods on the claim.

At What Cost?

The price of a cargo insurance policy depends on numerous factors. These include the items being shipped, their origin and destination points, and the carrier’s loss history. Items at greater risk of theft are, not surprisingly, more expensive to insure.

The way in which the goods are packed also can impact price, Bernas says. Goods that can be shipped within crates or containers tend to be priced more favorably than goods that can’t be packed, or are simply shrink-wrapped, where they’re more vulnerable to both damage and theft.

The mode of transportation can come into play, Bernas says. Shipments via barge tend to be more expensive than vessel shipments, because barges are more open, smaller, and likelier to capsize in heavy weather. Ocean shipments tend to be more expensive than air, because the goods are exposed to various risks for a longer time.

Shippers will want to work with their brokers and insurers to confirm they’re complying with any regulations that come into play when their shipments cross national boundaries. For instance, certain countries require shippers whose goods travel on their roads or rail systems to obtain a local transit policy, Griswold says.

“A cargo policy is a living, breathing thing,” Pasco says. Shippers need to regularly review their coverage to make sure it continues to adequately protect against the risks to which their shipments are exposed. ■

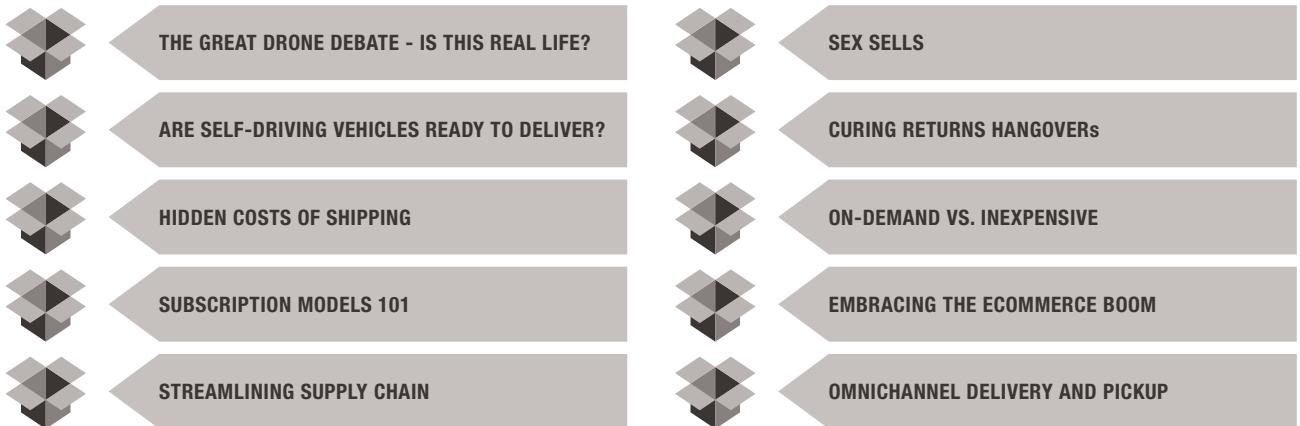
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SUBSCRIPTION BOX LOGISTICS:

BUILD-A-BOX

To help subscription box services manage orders amidst rapidly increasing demand, logistics providers bring the whole package—from kitting and tying bows to delivery and returns.

By Sandra Beckwith

Subscription boxes are the e-commerce age answer to the Fruit of the Month Club. From cookies to clothes to crafts, there's a subscription box service for just about everybody. Eating gluten free? Gotcha covered. Sports fan? No problem. Comics aficionado? Might be hard to pick just one.

Box subscribers pay a monthly fee to receive a package compiled according to a number of content models. With the “curated” option, subscribers provide no input about what they receive. In another model, subscriber input is controlled through a profile that contains their answers to questions that vary according to product category—skin type and tone for beauty products, for example, or preferred fiction genres for books. In yet another option common with clothing boxes, subscribers preview the service's selection and make any necessary changes before it's shipped.

Many companies ship on a shared drop date so customers get their boxes at the same time—a must when social media reveals are part of the brand experience—while others ship on the subscriber's order anniversary date each month.

Frequency and payment can vary, too. Some send one box every month for the same fee until the subscriber cancels. Others offer one-, three-, and six-month or longer options. Some don't send a second package until you tell them to.

And while most charge a flat fee based on the number of products in the box—three? five? seven?—clothing services might charge a monthly styling fee that's credited toward the price of garments purchased.

Reverse logistics are part of the puzzle, especially with loaned goods that have a nearly 100-percent return rate. Services that include clothing, toys, and jewelry employ turbocharged return procedures for cleaning, repair, and quality inspections.

Data also plays a significant role. Predictive analytics help services forecast each month's volume and get increasingly better at selecting what each subscriber wants and needs in a box.

E-commerce With a Twist

Conventional e-commerce involves shipping one-off orders as they're received, while the subscription box industry requires sending as many as hundreds of thousands of similar orders within a tight timeframe.

“The biggest difference is the commonality you have with subscription orders,” says Jeff Jones, vice president of omnichannel fulfillment at Saddle Creek Logistics Services, a Florida-based third-party logistics (3PL) provider. “You might be sending the same product to 2,000 people rather than shipping 2,000 unique orders.”

If it sounds complicated, that's because it is. And yet, it's an industry that's popular with entrepreneurs who start small, filling monthly orders in living rooms and garages. Once they hit a certain subscriber volume—usually between 2,000 and 5,000 monthly subscribers—many consider outsourcing fulfillment to a 3PL.

Uncorked Ventures, a northern California wine-of-the-month service, fills its own monthly orders. Founder Mark Aselstine, who sends an average of 400 orders in three configurations each month, doesn't anticipate changing his approach because of alcohol industry restrictions.

“A fulfillment house would be hard to permit for wine,” he says, referring to federal regulations. “There's a long checklist that includes a separate area with a different lock and key for the entrance to wine storage.” The cost of outsourcing would also bring his lowest-priced option, the \$55-per-month club, close to break-even, he adds.



Kali, a Fort Lauderdale, Fla., subscription service for feminine hygiene products, has the opposite problem: Self-fulfillment isn't an option because of different government regulations. The one-year-old company that now serves an average of 1,000 women monthly ships four or five different configurations of sanitary napkins and tampons made from organic cotton.

Tampons are considered medical devices because they're inserted in the body, so orders must be filled in an FDA-compliant facility. Mad Factory, the fulfillment arm of a local creative services agency, has set up an FDA-approved space in its warehouse to house the imported organic products and ship orders every month for Kali.

"We've cordoned off one area of our air-conditioned warehouse to keep the dust out as required," says Marc Aptakin, president of Mad Factory's parent company, Mad Studios. "Requirements include cleaning the floors a certain way, wiping down the tables after they're wheeled in, and wearing gloves when packing. It takes about one hour to stage the space."

Industry pioneer Birchbox, one of the most popular subscription services with more than 1 million subscribers, charges \$10 per month for a box of five beauty samples curated according to customer profiles. Inventory and fulfillment are handled by a 3PL that has worked closely with Birchbox from the beginning to develop procedures.

To Outsource or Not?

"When we started in 2010, the subscription box industry didn't exist, so we didn't have the luxury of simply asking a 3PL to execute," says Pooja Agarwal, vice president of operations at New York City-based Birchbox. "We worked with our 3PL to figure out what this process should look like."

Conversely, Le Tote, a San Francisco-area fashion rental company that ships more than 1.5 million products annually, manages logistics internally. Subscribers pay a flat monthly fee for a box that includes apparel and accessories. There's no set return date for the borrowed goods, but subscribers are charged each month whether they've returned the items in the pre-paid polybag yet or not.

Founded in 2012, Le Tote's fulfillment model is closer to traditional e-commerce than those of brands that ship the same box

or even a slightly personalized box to everyone. The system selects three garments and two accessories according to the subscriber's profile; the customer reviews the order before it's shipped and makes any necessary changes. The result is highly customized, with 90 percent of subscribers personalizing their totes.

"We looked at the possibility of outsourcing, but our business operation is fairly complex with a lot of moving parts," says Viljay Khare, vice president of operations and customer experience. "There isn't a 3PL with experience doing exactly what we're doing with everything under one roof. Plus, we're too young of a company to abdicate that to someone else."

Many subscription box services, however, are happy to outsource inventory management and fulfillment to a specialist, especially after they've gone the do-it-yourself route for several months. That was the case with Vinyl Me, Please, a record-of-the-month service. Each box has three pieces: an album that has been pressed exclusively for that month's subscribers, an art print, and a cocktail recipe. The company filled orders in-house until it reached about 5,000 monthly subscribers.

"Fulfillment took more time than was justifiable and was probably costing more money than if we outsourced," says Matt Fiedler, co-founder and CEO of the Denver company.

After an unsatisfactory experience with a local 3PL, Fiedler partnered with Saddle Creek. "They process millions of units every month with thousands of different permutations, so they have the technology, systems, and capabilities to take our fulfillment and scale it," he says.

Record of Success

Having the right logistics partner in place is particularly important to Fiedler because of challenges the company faces with its primary product: record albums.

"The vinyl manufacturing process requires a three- to four-month lead time, so forecasting the number we need can be difficult," he says. As a result, the company has built a more robust forecasting model that takes into account historical performance for overstocks and returns.

Japan Crate, a company offering subscription services for Japanese candy,



Subscription box pioneer Birchbox sends beauty product samples to more than 1 million subscribers every month.

collectibles, premium ramen, and beauty products, has become more sophisticated in its forecasting process as it has gained experience.

"Forecasting was a guessing game in the beginning because we didn't have a model to work from," says Cody Radcliff, director of logistics. "Not many subscription box companies are open about how they do business."

Two years later, and with the help of subscription software *Cratejoy*, the company uses analytics that include churn (drop-off) rate and monthly customer averages to better predict inventory needs.

Forecasting to an Estimate

Forecasting is a challenge for most subscription box companies, notes Lori Homsher, CEO of EchoData Group, a global order fulfillment house based in Pennsylvania.

"Promotions drive subscription box volume," she says. "When they do a promotion, they give us their forecast, but it's just an estimate. If the promotion falls flat, we've staffed up for more volume than we get. If it takes off, we might not have enough staff. The numbers uncertainty is a constant."

The in-house data science team at Bombfell, a men's apparel subscription company, crunches the numbers to get a confidence score recommendation on who will order and what they'll buy that month.

"Our data science group works closely with buyers to build a bottoms-up granular forecast of what demand will look like to make sure inventory matches requirements at the size and shape level," says Bernie Yoo, co-founder and CEO of the New York City-based company. Data on returns, return timing, anticipated demand, and seasonality are combined to provide

snapshots of future volume projections and inventory needs, as well.

Bombfell also uses data to make sure the company provides the right garments with the right fit for each subscriber. Whether clients return or keep an item, they complete a feedback form that gives the system insight into what does and doesn't work for them.

"That feedback goes into our recommendation engines and informs them on the right type of fit or style for them and similar customers," Yoo adds.

Inventory issues aren't just about appropriate product selection. Ensuring products going into boxes arrive at the distribution center on time can be an ongoing problem, regardless of the operation's size. Aselstine at Uncorked Ventures drove with his young children to a Napa Valley winery on a December Saturday morning to pick up five cases of wine because it was the only way to get it on time.

Japan Crate is moving its fulfillment from northern California to Japan so it has better access to the Japanese products it currently buys through local importers.

"If a product or component is hung up in customs or faces some other delay, we need a quick turnaround for receipt and shipping when it does arrive," says Homsher. "In many cases, this requires staffing flexibility, adding shifts, or reworking the entire job."

Staffing Up

Clearly, proper staffing for fulfillment is essential. While technology is a key component for managing inventory and organizing order picking, people still pick and pack. Managing the workforce needed is slightly easier when subscription companies ship on the customer's order anniversary date because companies or their 3PLs can fill orders throughout the month as needed.

Kitting is often an ongoing process, however, even when there's a shared drop date. When the subscription model uses a "base" product offering that everyone gets, workers can build those boxes first, adding in the personalized products closer to drop date.

Even so, staffing to fulfill hundreds of thousands or even millions of orders with a shared drop date once each month means outsourced logistics providers often employ temporary labor.

Subscription clients at Saddle Creek



Vinyl Me, Please, a record-of-the-month club, filled orders in-house until it hit 5,000 monthly subscribers. It now contracts with 3PL Saddle Creek Logistics Services, which also stores its excess inventory.

send orders to list sizes ranging from 2,000 to 3 million monthly. It's not surprising, then, that its fulfillment workforce includes temporary labor. Employment agencies with offices on-site help, but even with that assistance, it's an ongoing challenge given the variability, Jones says. At the same time, 3PLs have the advantage of sharing labor across multiple accounts.

Because branding and image is crucial to men's clothing service Bombfell, its Massachusetts-based apparel e-commerce provider Quiet Logistics recruits workers with retail experience. "They know how to fold, handle, and display clothes," says Brian Lemerise, president of Quiet Logistics. "They're also used to providing good customer service. Even though they don't meet our clients' customers face to face, they know whose doorstep their boxes will land on."

Finishing Touches

In addition to making sure the products are prepared properly, services often use other packaging elements for branding as well. For some, the box says it all, as any Birchbox subscriber knows. Extras for some brands might include tissue paper, stickers, ribbons, and bows.

"Some subscription box companies want the paper to be crinkled a certain way and sealed with a sticker in a specific position, but they can get to the point where they've got as many as 17 packing touches," says Mike McComb, vice president of development at freight management provider Newgistics in Austin, Texas. "We help them reduce that number but still find an effective solution."

In some cases, just as much attention to detail is required for the returns process. Because most of Le Tote's loaned apparel and accessories is returned, it needs to be inspected, repaired if needed, and cleaned before it returns to inventory. This happens quickly to reduce carrying costs.

"We have an elaborate cleaning plant at our distribution center that uses proprietary technology to clean a wide assortment of products as quickly as possible while maintaining longevity and a fresh look," says Khare. "The sequence we use from check-in to cleaning to quality inspection resembles an assembly line."

Quick Returns

Quiet Logistics sees an average return rate of 30 to 40 percent on subscription services. To get those products back into inventory quickly, companies work to make the process easy for subscribers and speedy for the services. The growth of e-commerce and subsequent volume of returns make it possible for Quiet Logistics to use consolidation centers when it makes sense.

"Early on, it took longer at a consolidation center to get a full pallet to put on a truck. But with the volumes we're seeing, it now only adds one or two days to the transit time," Lemerise says. Quiet Logistics makes up that time on the back end with a "super quick" and efficient returns process, he adds.

"It involves a lot more logistics planning and analytics than people realize," says McComb. "You can end up with limited inventory to sell, then lose customers because your assortment isn't good enough."



Shipping is a major expense for services on the front end—sending boxes out—and for returns. To keep it cost-effective, distribution is scheduled to allow for less-expensive ground transportation, except in the case of perishables. Transportation companies used might vary depending on volume and local sort center capacity.

A Holistic Approach

UPS advises its subscription service customers to look at transportation costs holistically. “We like to talk about cost and value across the whole supply chain,” says Louis DeJianne, director of marketing for consumer goods, apparel, and retail. “If we can help you be more efficient, the end cost of delivery is less important.”

As subscription box companies grow and become more familiar with customer preferences, some solidify the relationship and boost revenue by adding traditional e-commerce to their online offerings. For example, if subscribers like a sample, they can buy the full-size product from the subscription company’s website. Birchbox has about 3 million non-subscriber customers

who purchase online or at its Manhattan retail store.

Vinyl Me, Please has added e-commerce for additional revenue but also to help deal with overstocks. “Otherwise, it can take us one year to work through a 10- to 15-percent overage,” says Fiedler.

Subscription box services is a complicated business that requires careful attention to metrics and costs. Companies

that can’t figure it out and scale fail quickly—13 percent of the services tracked by MySubscriptionAddiction.com have ceased operations. And those that thrive? Dollar Shave Club, one of the best known, was acquired by Unilever for \$1 billion five years after it was founded.

Who knows? That next big deal might be for dog treats, beauty products, or healthy snacks in a box. ■

Subscription Box Services by the Numbers

More than 2,000

Number of subscription box services in MySubscriptionAddiction.com database

Seven

Number of boxes received by the average subscriber

3,000 percent

Increase in online traffic to top subscription service sites over the past three years, according to a 2016 Hitwise consumer insights report

25 to 39 years old

Age range of most subscribers; they are also predominantly women (58 percent)

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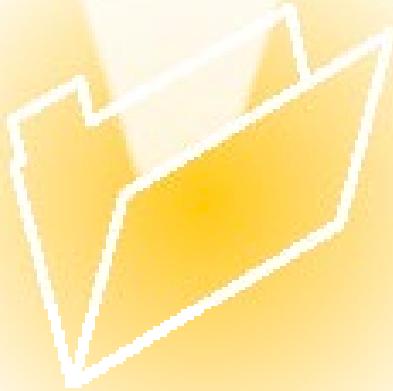
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Casebook | by Michael D. White

Caldwell Hospital Gets A Lean Bill of Health

A North Carolina hospital improves patient care by prescribing a lean and healthy supply chain.

It took some time for Caldwell Memorial Hospital to discover that the muscularity of its supply chain had atrophied because excess waste was impeding its commitment to providing quality service to its patients. It was an epiphany for the small, 110-bed hospital, located in rural Lenoir, N.C.

A lack of effective inventory control and oversight, multiple stock locations, and an overly complicated sourcing process caused the hospital to take a long, hard look at how to move hundreds of critical items—such as disposable syringes and latex gloves—more effectively and economically from the vendor to the patient’s bedside precisely when they’re needed.

“We knew we had to change the way we did things in order to bring better value to our patients,” says Heather Foss, Caldwell’s director of quality, risk management, and performance improvement. The hospital realized that it needed to trim the fat and go lean.

In 2008, the North Carolina Healthcare Initiative Collaborative, under the auspices of the University of

North Carolina’s Healthcare Network, received a grant from the Duke Endowment to fund small rural hospitals in North Carolina in an effort to migrate their operations to a lean management protocol. The move was seen as an all-out campaign to cut the excess from day-to-day clinical functions that would reduce costs and maximize the efficiency of its 900-plus employees and more than 150 physicians.

A coalition of five rural hospitals, including Caldwell Memorial—dubbed the Carolinas Lean Healthcare Collaborative (CLHC)—was formed to oversee the transition process. The decision was made to partner with Simpler Consulting, a Truven Health Analytics/IBM Watson company specializing in helping healthcare facilities



Bill Devereux, director of materials management for Caldwell Memorial Hospital (center) and his supply chain team are reaping the benefits of a lean management process.

inventory control; job functions; productivity; and replenishment systems.

“With Caldwell, we decided to focus on inventory, productivity, and technology,” says Spann. “We saw they needed to zero in on improving inventory visibility in tracking and monitoring product to make sure they have the right product available when they need it.

“Along with that is distributing product from dock to bedside,” he adds.

A 15-month program was put in place that broke down Caldwell’s supply chain operations into five “support flow cells”: procurement/sourcing; receiving/sorting; inventory optimization; distribution flow; and payment.

Inventory optimization and distribution flow were identified as the two areas most in need of rehabilitation.

The hospital’s operating room was found to be functioning with cumbersome multiple inventory ordering processes that resulted in serious limitations on the quantity of critical supplies and the frequency with which they could be reordered.

The first step called for the installation of a point-of-use stock location system that helped Caldwell gain what Spann calls “tactical control” over its supply chain by identifying specific inventory costs that could be reduced.

As a result, the hospital’s inventory was brought under control by lowering expenses, increasing inventory visibility, eliminating stock outages, and maximizing utilization—in short, getting everything right: place, quantity, and price.

The results have been impressive, says Foss, with a total reduction of 3,746 square feet of supplies and a cut in the number

of SKUs at its two wings by an average of 20.5 percent from 843 to 665.

In addition, the seemingly chronic product return issues that revolve around not knowing what is and isn’t on the shelves was replaced with BlueBin technology that simplifies the distribution process by using visual “triggers” to deliver the right supplies to the right place at the right cost.

“We no longer have to stock our own med rooms as that’s now managed by the new lean system,” says Foss. “There’s more space, better flow, and we’re no longer in each other’s way. We can spend less time searching for products and more time on value-added work.”

Let’s Get Visible

The task of infusing complete visibility of the entire supply chain process was accomplished with the help of a partner tech firm, which oversaw the installation of new software to standardize operations procedures, including real-time visual management, into Caldwell’s supply chain operations. The inventory management software that was installed “sits on top of the supply chain and offers complete visibility to show vital statistics and identify specific issues that need to be addressed,” says Spann.

With the system fully implemented, Caldwell now monitors its supply chain on-site—a highly successful technique that Caldwell found “directly and effectively involves the people who do the work, where they work,” says Foss.

Such a setup gives staffers the wherewithal “to know what’s going on in the entire system,” says Spann. The staffers monitor the supply chain that is installed with the client for six months or one year to help implement the system. “If things go off the rails, they jump in and fix the problem at the point of entry, like a plant floor supervisor or manager who makes sure that the operation is running effectively all the time,” he adds.

As for Caldwell, “We installed key dashboards in ‘mission control rooms’ that display conditions along every link of the supply chain on 50-inch computer

infuse the lean management process into their operations.

Over the next six years, Simpler carried out assessments of nine value streams at Caldwell Memorial, including in-patient care, surgery, revenue cycles, emergency room operations, and diagnostic imaging. In November 2014, the company turned its spotlight on Caldwell’s supply chain and began a highly detailed assessment of its inventory visibility, spend, and operations—the first step in designing and implementing a course of action.

Linking Vendor to Patient

“We took a hard look at the warehouse operations and the process linking the vendor with the patient’s bedside,” says James Spann, Simpler’s global practice leader for supply chain management and logistics. “The existing process focused on the transactional effort such as getting requisitions in, working with vendors, group purchasing organization, getting products into the system, distributing them, and making sure the vendor got paid.”

The decision was made to implement the latest technologies in certain specific areas including supplier contracting, management, and performance; pricing and value analysis; the standardization of products; consolidation; vendor relationships;

monitors in real time,” says Spann. “We built, designed, and implemented technology-based solutions, and trained their people how to best utilize them because they are going to have to take it over.”

The process to inject lean into Caldwell Memorial’s operations was relatively easy due to the engagement of hospital CEO Laura Easton.

Lean, says Spann, is a concept that results in continuous improvement, but one that will work only if senior management is involved from start to finish. Easton’s mission control is the hospital’s executive conference room, where she meets with her leadership team daily on key issues and what’s being done to improve operations.

According to Foss, the overall results of implementing a lean supply chain strategy have been a significant reduction in employee frustration and improved product availability. In addition, end users have

been removed from the supply management process; excess and obsolete supplies have been eliminated; and order placement is virtually error-proof, while products standards have been set and maintained and cost has been significantly decreased.

The Bottom Line

In bottom-line terms, “The return on investment (ROI) is monitored for every value stream,” says Foss. “Now we’re able to keep track of both direct and indirect value of return,” she says, pointing to a reduction in supply spend of \$1.4 million, a true ROI of slightly more than \$2 million, or 3.4:1 achieved, generated from January 2015 to May 2016 with supply chain spend as a percentage of net revenue cut from 22 percent to 19 percent.

Lean assessment identified a potential reduction of \$421,000 in distribution costs, as well as \$366,000 from a reduction in the

time Caldwell’s clinicians spent managing the hospital’s supply chain.

“When we started assessing Caldwell’s supply chain, we stationed an augmented team to get the operation up and running,” says Spann. “After 15 months, we started to wean off. We finished implementing the lean concept in April 2016 and performed a refresh audit of their inventory control component in August and September. We recommended and are conducting some retraining. But now they’re self-contained and running on their own, and we still work with them in an executive coaching capacity and advisory role.”

“Over time, Caldwell Memorial has been able to groom and grow internally, so Simpler currently fills a critical advisory and executive coaching role,” says Foss. “We’re doing things smarter and what’s most important is that our patients are receiving better care because of it.” ■



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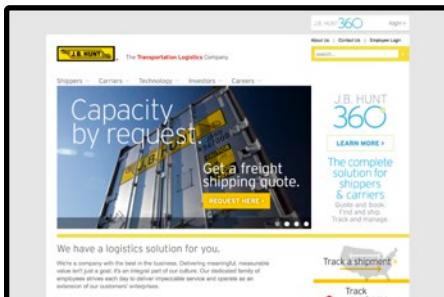
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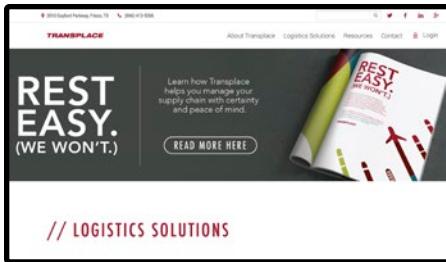
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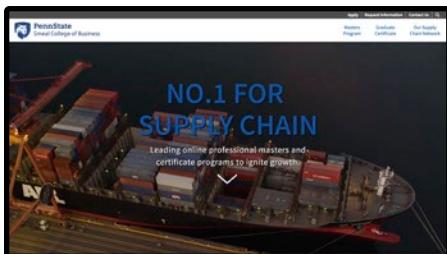
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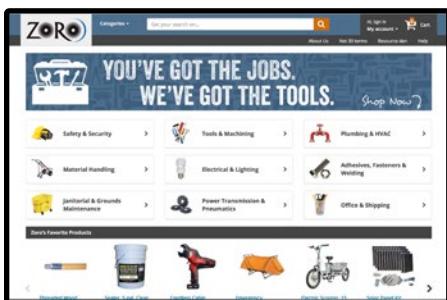
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Temperature-Controlled Shipping - Yard Management

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Over land, on the water, in the air—or in any combination—Lynden has been helping customers solve transportation problems for almost a century. Operating in such challenging areas as Alaska, Western Canada and Russia, as well as other areas around the globe, Lynden has built a reputation of superior service to diverse industries.

TMS

UltraShipTMS • www.ultrashiptms.com

UltraShipTMS offers award-winning software-as-a-service solutions to leading shippers in food production, packaging, retail and other industries. UltraShipTMS and LoadFusion Transportation Optimizer (the Stevie Awards' 2013 Transportation Product of the Year) provide a single-source solution for optimization, transportation, and settlement for inbound and outbound shipping across all modes of transport. Robust private fleet management capabilities unmatched by any other solution currently available make UltraShipTMS an emerging leader in the supply chain management industry.



TRANSPORTATION



Schneider • www.schneider.com

Schneider is more than just truckload services, it's the leading provider of premium truckload and intermodal services. Schneider creates transportation solutions for customers using the broadest portfolio of services in the industry. Schneider has several divisions that provide transportation and transportation related services: One-way Truckload, Dedicated, TruckRail, OptiModal, Brokerage and Expedited. Visit Schneider's site to find out more about the company and the services it provides.

YARD MANAGEMENT

Yard Management Solutions • yardmanagementsoftware.com

Eagle Eye by Yard Management Solutions is your ultimate partner as it works 24/7 to increase efficiencies, streamline operations and reduce costs. Real time visibility and instant analytics on all assets, shipments and workforce activities deliver the moment-to-moment pulse on your operation. Powerful functions lighten your workload and do the heavy lifting for you and our alert system will notify your team of problems before they arise. Our cloud based software is easy to learn, simple to use and will keep your team informed, on track and in motion. Call 800-766-6197.





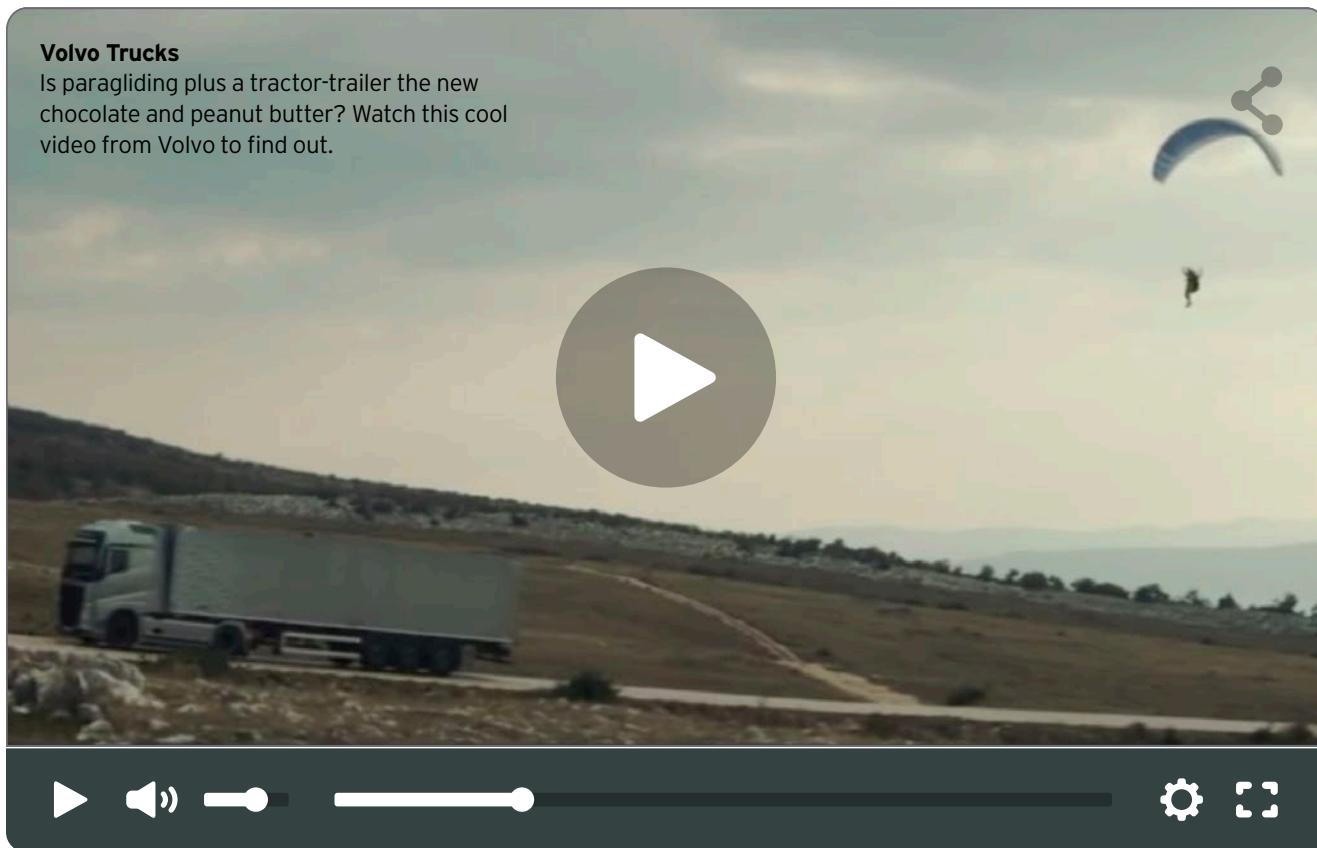
Inbound Logistics selects the best logistics and supply chain videos available anywhere and serves them up on www.YouTube.com/InboundLogistics

The Flying Passenger Live Test

bit.ly/VolvoParaglider

Volvo Trucks

Is paragliding plus a tractor-trailer the new chocolate and peanut butter? Watch this cool video from Volvo to find out.



Wake Up and Check Out This Sleeper Semi-Truck

bit.ly/NikolaOneSleeper

Nikola Motor Company

This video unveils the highly anticipated Nikola One Class 8 zero emission hydrogen-electric truck, which utilizes a fully electric drivetrain powered by high-density lithium batteries. A hydrogen fuel cell supplies on-the-go energy, giving the Nikola One a range of 800 to 1,200 miles while delivering nearly double the horsepower and torque of any semi-truck on the road.



Command Performance

bit.ly/PerformanceTeam

Performance Team

In 2017, Performance Team will celebrate 30 years of providing the retail and manufacturing industries with end-to-end supply chain services. Check out this video to see how Performance Team has worked hard to earn and maintain a reputation as one of the leading trucking, consolidation, and distribution companies in the United States.

Oh, OOCL!

bit.ly/OOCL_Logistics

OOCL Logistics

As a world-class provider of innovative logistics and supply chain services and solutions, OOCL Logistics has an extensive network of more than 130 offices in 30 countries. With its recent addition of offices in Mexico and Central and South America, and trans-continental intermodal services between China and Western Russia, see how OOCL's network continues to expand to meet shippers' evolving global sourcing needs and logistics requirements.



AR Traffic Control

bit.ly/AR_Traffic

AR Traffic Consultants

This fun video shows how AR Traffic Consultants, Inc. designs all its products and services specifically to improve shipping efficiency, accuracy, recordkeeping, control and auditability. See how AR Traffic provides the actionable information companies need to reduce their freight costs.

Need Ocean Service? See Seaboard

bit.ly/Seaboard_Marine

Seaboard Marine

Looking for an ocean transportation company to handle your LCL, refrigerated, project, specialized and dry bulk cargo? Tune in to this video to see what Seaboard can do for you. Seaboard provides direct, regular service between the United States and the Caribbean Basin, Central and South America. With a fleet of more than 30 vessels serving 35 ports, Seaboard Marine has steadily developed into a trade leader in the Western Hemisphere.



No Excuses

bit.ly/CoyoteLogistics

Coyote Logistics

Coyote's "No Excuses" philosophy to offer both shippers and carriers the best service experience in the industry has catapulted it to be one of America's leading 3PLs, as you'll discover in this video. See how Coyote's fanaticism for this commitment is fueled by its culture, people, and technology every day.

WhitePaperDigest

Industry experts amass supply chain management best practices and skill sets, and invest in new research and evaluation tools. Now you can benefit. *Inbound Logistics* has selected this collection of whitepapers that will give you a jump on important supply chain issues. For more information on any of these whitepapers, visit the Web sites listed below.



Unyson Logistics

TITLE: *Examination of an Inbound Web Portal*

DOWNLOAD: <http://bit.ly/2lkzT9b>

SUMMARY: In an industry that is largely slow to adopt new technology, it can be daunting to bring 3PL providers, customers, vendors, and carriers together to enhance the supply chain. However, those parties willing to embrace new processes will appreciate the benefits of an inbound web portal. This whitepaper describes the inbound web portal process, outlines the supply chain benefits, and offers advice for overcoming obstacles during implementation.

Averitt

TITLE: *The Retailer's Guide to Vendor Compliance and Reducing Chargebacks*

DOWNLOAD: <http://bit.ly/2kyOgCT>

SUMMARY: With increasing demands from retail buyers, this whitepaper is aimed at providing tips and best practices that shippers can utilize to help avoid delivery and compliance mishaps. You'll learn several key practices that you can put into action immediately to help boost your ability to meet your retail vendor's compliance requirements. From coordinating warehousing and production to knowing what to ask of your carrier, become empowered to ship retail without the worry of incurring costly chargebacks and fees.

enVista

TITLE: *Find the Money: How a Transportation Spend Diagram Can Help*

DOWNLOAD: <http://bit.ly/2lkC9gC>

SUMMARY: Transportation leaders are constantly looking for ways to reduce costs while improving service levels as they conduct strategic assessments. Using the Spend Diagram to document freight flows and costs on a single page is the best way for a transportation team to collect data and focus their efforts. Read this new whitepaper to learn how a Spend Diagram can identify savings opportunities throughout your transportation operations.





Amber Road

TITLE: *Bracing for Instability in Global Trade*

DOWNLOAD: <http://bit.ly/2lkxmfP>

SUMMARY: As we move into 2017, global trade management executives need to brace against supply chain disrupters. The key is investing in technology and making process changes in advance. On your to-do list this year: manage supply chain disruptions with supply chain visibility; quickly respond to the ebb and flow of consumer demands; enable cross-border e-commerce in response to booming retail growth; manage secure trading partner collaboration, and more.

HighJump

TITLE: *5 Dirty Secrets of Warehouse Management Systems*

DOWNLOAD: <http://bit.ly/2ifWJwZ>

SUMMARY: It's a fact: most best-of-breed warehouse management system (WMS) providers force you to pay every time you require a system change. Uncover five more dirty secrets many warehouse management systems don't want you to know. Download this whitepaper to discover these hidden truths and gain valuable information on considerations for evaluating WMS vendors. Arm yourself with information that will enable you to select a system that will fulfill your requirements today and years from now as your company grows—all at a low total cost of ownership.

Port Logistics Group

TITLE: *What Arrives in L.A. Stays in L.A.:*

DC Bypass Strategies that Leverage the Largest U.S. Gateway

DOWNLOAD: <http://bit.ly/2kySQBh>

SUMMARY: Centralized distribution can be inefficient and costly for West Coast fulfillment. A well-planned DC bypass strategy can reduce transportation and inventory carrying costs, increase speed to market, delay allocations, and take pressure off existing customer distribution centers. With the help of a 3PL, retailers and manufacturers can create a customized DC bypass strategy that supports growth and addresses the increasing time-sensitivity of customer deliveries.

MD Logistics

TITLE: *Where Does Privacy Stop and Publicity Begin in the Logistics Industry?*

DOWNLOAD: <http://bit.ly/2lQtsZv>

SUMMARY: A comprehensive look at the complex privacy problems encountered by 3PL providers in the modern logistics industry. While 3PLs try to stand apart from their competition using content marketing and social media, this can present serious privacy concerns. See how 3PLs can maintain confidentiality when sharing customer-focused content.



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WhitePaper Digest is designed to bring readers up-to-date information on all aspects of supply chain management. We're building a database of SCM whitepapers, and you can help. E-mail us with whitepaper recommendations: editorial@inboundlogistics.com



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Third-party logistics company **Crane Worldwide Logistics** opened two new facilities in The Netherlands. The first (pictured) is an office at the Amsterdam airport, providing dedicated client support for its airfreight operations. A short distance from the Amsterdam airport and the Rotterdam and Antwerp ocean ports in Tilburg, Crane also opened a 53,000-square-foot customs bonded warehouse to support air and ocean freight operations.

//Services//

Werner Enterprises, a provider of transportation and logistics services, completed a 10-acre expansion project at its terminal in Laredo, Texas. The expansion includes a second entrance used exclusively for Werner equipment, 110 additional trailer parking spots, and four new inspection bays. The facility supports the company's cross-border service offerings into Mexico.

Florida's **Port Manatee** opened its newly expanded south gate complex, a \$1.1-million project designed to support the movement of oversized cargo. Widened entry and exit lanes facilitate

extra-large project cargos, including massive liquefied natural gas heat exchangers being manufactured at the Air Products Port Manatee facility across U.S. 41 from the port.

Global logistics provider **Agility** opened a temperature-controlled life sciences storage and handling facility in the Hyderabad Airport Zone in India. Agility's 6,000-square-foot Life Sciences Excellence Center at Rajiv Gandhi International Airport is strategically located to serve pharmaceutical manufacturers in Hyderabad, Goa, Pune, Vishakhapatnam,

and Bangalore. The center provides conditioning, preparation, and storage of pharmaceutical goods and operates as a control tower for Agility life sciences customers in India.

//Transportation//

Roadrunner Freight, a less-than-truckload carrier, improved its routes in 18 major markets, including San Francisco, Seattle, Chicago, Atlanta, Houston, and Indianapolis. The enhancements enable the company to expedite nearly 30,000 shipments

monthly, ensuring one- and two-day delivery earlier than previously available.

China Railway Express (CRE) made its first China-to-London crossing in January 2017, becoming the first freight train to complete the nearly 8,000-mile journey. Packed with 34 containers, the CRE train took 18 days to reach the U.K. from the Chinese port city of Yiwu. The rail service, dubbed the new Silk Road, now covers 15 cities in 10 countries in Europe.

//Technology//

Logistics software provider **McLeod Software** partnered with **project44**, a provider of intelligent web-service APIs, to offer a web-based service that gives users of McLeod's *PowerBroker* freight brokering solution direct access to project44's less-than-truckload transportation solutions, including carrier quotes, lane-by-lane transit time calculations, load tendering, and real-time shipment status updates.

Supply chain solutions provider **NFI** launched a global integrated technology suite to help shippers streamline their global supply chains. The solutions available within the technology suite include Smart Portal, Global Veritas, and Business Intelligence so users can manage and monitor each link in their supply chain, from product concept to customer delivery.

Supply chain software provider **TouchPath** expanded the capabilities of its *TouchWMS* warehouse management system with the addition of a "power picking" control center. The tool enables specific picks to be assigned to specific pickers, and presents assigned picks to warehouse operatives on-screen



Third-party logistics provider **KTS Logistics** purchased new over-the-road vehicles, which will be used to offer pick-up and delivery services in select areas of Ontario, Canada, with a focus on tailgate service for retail shippers and customers. The new trucks mark the company's first foray into asset-based operation.

via mobile terminals. The software then tracks the status of each pick in real time, measuring performance by individual and by team.

Supply chain solutions provider **FusionOps** launched a suite of cognitive applications to help companies optimize supply chain performance. Embedded artificial intelligence and machine learning connect the dots between complex demand signals, manufacturing data, global inventory, orders, and external data to provide a cognitive view of operations. The system makes recommendations and can take action in real time without human input.

TMS provider **3Gtms** and freight claim management software vendor **TranSolutions** started a new technology and mutual referral partnership. The collaboration includes direct integrations between the systems to speed up and simplify the claims process for shippers and logistics service providers.

TMS provider **Aljex Software** released its Inbound Document Portal (IDP), a free update to its document imaging module. The IDP is a web-based application that makes receiving documents easier. Via a dedicated email address, inbound documents

The C4 Red UHF GUN from mobile solutions manufacturer **iDTRONIC Professional** features an external UHF reader, a rigid pistol grip, and an enhanced read range of 20 feet, enabling faster bulk reading. It also features a bright 5-inch high-definition display with an LED backlight, increased display and scratch resistance for outdoor use, and buttons compatible with use while wearing work gloves.

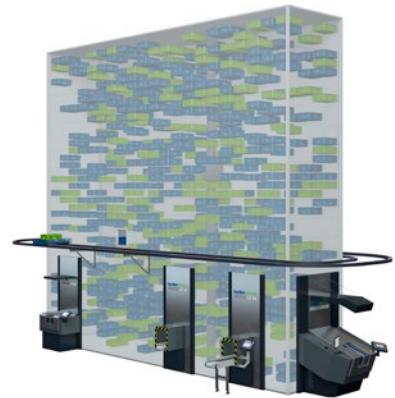


automatically appear in the IDP. Using an identification number, relevant shipment information populates the screen, alongside functionality to perform freight bill auditing.

//Products//

All crane systems from **J D Neuhaus** are resistant to dust, humidity, and aggressive atmospheres as a standard, and operate within a temperature range of -4°F to 158°F. All cranes are suitable for indoor or outdoor installation, and meet a wide range of global compliance and safety standards. Each piece of equipment features support from a global servicing operation.

DuPont unveiled the latest Tyvek® Xtreme™ W50 Cargo Cover, which provides cold temperature protection in addition to screening from solar radiation. Suitable for the protection of pharmaceutical products, the cargo cover is made of breathable material, which helps control humidity levels and stops the formation of damaging condensation. Tyvek covers are available for most standard airfreight pallet sizes.



Intralogistics equipment supplier **Kardex Remstar's** LR 35 storage and retrieval unit enables fast delivery when picking small parts. The unit consists of a shelf system with automatic bin handling, picking stations, and its own internal logistics software, and can achieve around 500 order lines per picking station, per hour. The LR 35 prepares the next items as a pick occurs, then spins a turntable 180 degrees to present the next bin to the picker, reducing wait times.

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8:45 AM – 9:45 AM**

Building Supply Chain Sustainability for Competitive Advantage: Lessons learned from leaders in innovative facility design

ANDREW WINSTON Sustainability Expert and author of *Green to Gold*

**Tuesday, April 4
8:45 AM – 9:45 AM**

Industry 4.0 – How intelligent machines are transforming supply chains

MARKUS LORENZ Partner and Managing Director, The Boston Consulting Group

**Wednesday, April 5
8:45 AM – 9:45 AM**

Preview of MHI 2017 Annual Industry Report

GEORGE W. PREST CEO, MHI
SCOTT SOPHER Principal, Deloitte Consulting LLP

**Wednesday, April 5
1:00 PM – 2:00 PM**

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AUDIENCE: Manufacturing and supply chain professionals
FOCUS: The latest manufacturing, distribution, and supply chain equipment and systems; building supply chain sustainability for competitive advantage; how intelligent machines are transforming supply chains

APR 30 – MAY 3, 2017 Ft. Worth, Texas
Warehousing Education and
Research Council

WERC 2017: 40th Annual Conference for Logistics Professionals

www.werc.org/2017

AUDIENCE: Logistics and warehousing professionals
FOCUS: The value of women in the supply chain; extending the life of a legacy WMS; five rules to transform supplier relationships; reducing shipping costs with carton optimization

MAY 16–17, 2017 Atlanta, Ga.
Georgia Center of Innovation for Logistics

Georgia Logistics Summit

bit.ly/GALogisticssummit

AUDIENCE: Supply chain and logistics professionals
FOCUS: Roundtable discussions of logistics success stories; tackling operational visibility through technology; next-generation analytics for supply chains; transportation update and takeaways

MAY 21–24, 2017 Orlando, Fla.

Institute for Supply Management
ISM 2017 Annual Conference
ism2017.org

AUDIENCE: Supply chain managers
FOCUS: Building transformational supplier relationships and identifying supply base optimization actions to drive supply performance; global supply chain challenges; actionable ideas, standards, and best practices for supply chain professionals' company and career

CONFERENCES

MAR 7–9, 2017 Austin, Texas
Worldwide Business Research

LogiMed 2017

www.logimedusa.wbresearch.com

AUDIENCE: Medical device supply chain stakeholders; *IL* readers get a 25-percent discount to attend with code LM17INLO
FOCUS: Achieving end-to-end visibility and driving growth in the healthcare industry; partnering to cost optimize the supply chain and provide high service levels; collaborating to drive supply chain value

MAR 14–15, 2017 Atlanta, Ga.
Terrapinn

Home Delivery World 2017

bit.ly/homedelivery2017

AUDIENCE: Supply chain, transportation, fulfillment, logistics, e-commerce, information technology, and warehousing professionals
FOCUS: How direct fulfillment centers can support an interconnected retail strategy; the advantages of consumer-facing supply chains; international expansion strategies for omni-channel retailers; transforming your delivery model

MAR 19–21, 2017 Palm Springs, Calif.
International Warehouse Logistics
Association (IWLA)

2017 IWLA Convention & Expo

www.iwla.com

AUDIENCE: Warehouse logistics professionals
FOCUS: Warehouse logistics and economic impact; new ideas to motivate employees for continued growth; transportation law and domestic and international fulfillment opportunities

MAR 20–22, 2017 Henderson, Nev.
Transportation & Logistics Council

43rd Annual Conference: Education for Transportation Professionals

bit.ly/TLC2017conference

AUDIENCE: Supply chain, logistics, and transportation professionals
FOCUS: Critical issues facing the transportation and logistics industry; supply chain security best practices; how shippers and carriers can work together to avoid transit loss or damage through better packaging, security, and communication; cross-border trade with Canada and Mexico

MAR 28–30, 2017 Dallas, Texas
Express Carriers Association (ECA)

ECA MarketPlace

bit.ly/ECAmarketplace

AUDIENCE: Logistics and supply chain professionals; shippers and carriers
FOCUS: Forging logistics partnerships; providing viable supply chain alternatives; new technologies and transportation services

APR 9–12, 2017 Orlando, Fla.
National Shippers Strategic Transportation
Council (NASSTRAC)

Shippers Conference & Transportation Expo

bit.ly/shippersexpo

AUDIENCE: Transportation, logistics, and supply chain professionals
FOCUS: Economic, trucking, and transportation updates; best practices in transportation contracting; accounting for freight emissions and building a sustainable supply chain; best practices in transportation contracting

SEMINARS & WORKSHOPS

MAR 21–22, 2017 Cambridge, Mass.
MIT Sloan Executive Education

Supply Chain Strategy and Management

executive.mit.edu

AUDIENCE: Logistics and supply chain professionals
FOCUS: Trends in supply chain strategy; guidelines for making strategic sourcing and make-buy decisions; integrating e-business thinking into supply chain strategy and management



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**Pennsylvania State University,
Smeal College of Business** pg. 43
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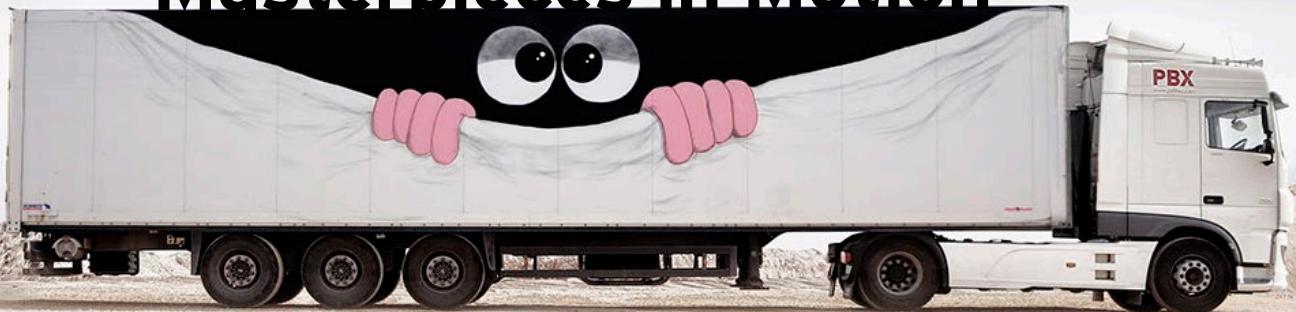
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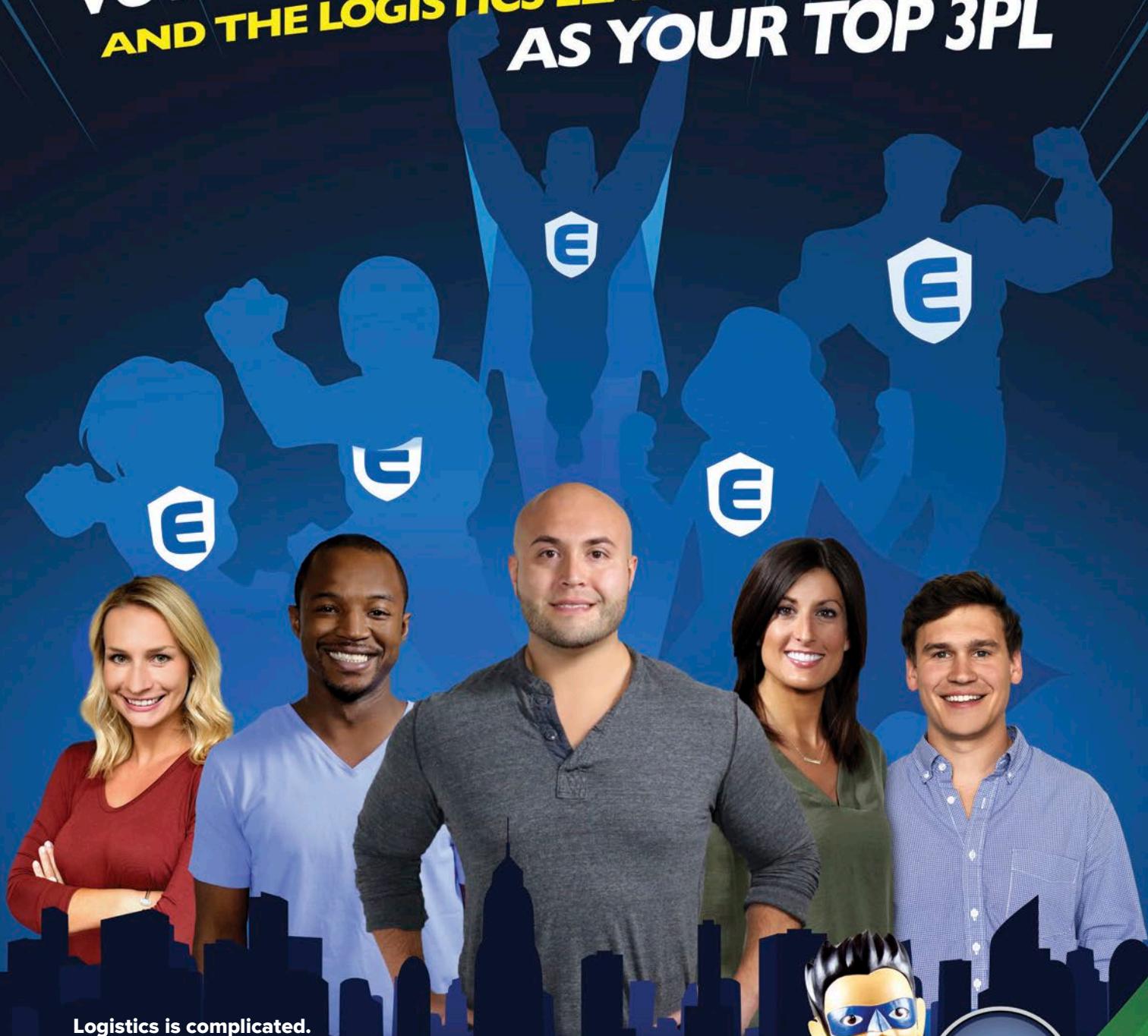
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